



Symbol photograph

Operating Instructions and Technical Description

Rotary Grid System SL 25T/2R to SL 250 T6R and SL-P 30 to SL-P 250

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Introduction

Congratulations on your decision of purchasing a chopped goods or pellet heating system by Lindner & Sommerauer. You are now the owner of a state-of-the-art furnace operated only with local and renewable fuels.

Please read the following introduction and observe the listed items to warrant smooth operation.

- Good heating material quality
- Dry storage space
- Correct operating mode
- Maintenance and cleaning

If you need a technician, contact your personal consultant under number:

Safety Provisions:

General:

The fully automatic chopped goods and pellet heating system complies with the state of the art and the relevant operating provisions, as well as the TRVB H 118. In the rotary grid combustion system, the fuel is burnt in the combustion chamber at a vacuum.

The system complies with the following EU directives and standards:



Electrical engineering: 2006/95/EC

Machinery directive: 2006/42/EC

Boiler inspection: EN 303/5

Declaration of Conformity: See Annex

Danger note:



Danger



The system is operated with 400V rotary current. Repairs must only be performed by SL-service technicians, SL-sales partners and authorised specialists (e.g.: electricians,...). We assume no warranty in case of danger from improper repair attempts. The furnace door or other maintenance openings must not be opened during operation.

Intended use:

The heating system serves to heat residential rooms. Only fuels according to EN 14961 or comparable international standards must be used. We assume no liability from improper use and setup. We recommend taking out a maintenance contract for environmentally compatible operation.

Staff and qualification

The heating system should be supervised by one person. This person is trained in the system's function by our technician. Furthermore, no additional qualification is needed.

Assembly and commissioning



Danger

The system must only be installed and taken into operation by SL service technicians and sales partners. The setup conditions must be observed.

Standard operation:



Danger

The system is economically designed and insulated. Nevertheless some components (e.g.: flue tube, ...) will produce radiation heat. Minimum distances from other components acc. to the local building provisions must be complied with.

Maintenance and Service



The system is operated with electrical current (400V). Pull the mains plug for all maintenance work. Improper repair attempts may cause danger to life from electric shock.



Danger

Maintenance work at the activated system is **not** permitted. Automatically running processes (e.g. cleaning, etc.) may cause danger from crushing.

Disclaimer:

The heating system has been reviewed according to EN 303-5 "Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW". SL-Technik GmbH assumes no liability for use for any other than the intended purpose or for improper use.

Area of Application:

The following operating instructions apply to chopped goods and pellet systems of SL-Technik GmbH.

We assume no liability for print and typesetting errors.

The operating instructions are the intellectual property of SL-Technik GmbH. Copying or passing on of excerpts to third parties shall only be permitted with the express consent of SL-Technik GmbH.

Fuels

Your heating system is suitable for the following standard chopped goods types and standard pellets:

Standard chopped goods:

Water content: W 15 – W 35; chopped goods B1 acc. to EN 303-5

Size: P16B – P45A acc. to EN 14961-4

P16B: max. 3% > 45mm, all less than 120mm; cross-section 1cm²

P45A: max. 6% > 63mm, no more than 3.5 % > 100 mm, all less than 120mm; cross-section 5cm²

Dependent on the space output installed on site!

Only untreated wood must be used as fuel!

Note

Observe the following when using carpentry waste (such as grinding dust, planing saw dust, etc.):

Fast gasification may cause fast deflagration at self-ignition of the system. In this case, operate the system in continuous operation. When heating with fuels of inferior quality, there may also be a considerable performance drop of the system, leading to additional consumption of chopped goods!

Standard pellets:

Pellets with a **diameter of 6mm** according to EN 14961-2A1 are suitable.

Warranty claims shall only apply when using the indicated fuel. We are gladly willing to name manufacturers who comply with these quality claims.

Warranty

The system requires annual maintenance to warrant secure, environmentally compatible and thus energy-saving operation. Commissioning and annual maintenance by the service partner or the Lindner & Sommerauer customer service are conditions for the warranty.

Boiler temperature

The boiler should reach a temperature of at least 70°C in operation. By raising the return temperature to 60°C, the boiler is flushed evenly and corrosion of the boiler inner walls from flue gas condensation is prevented.

Any boiler warranty claims shall lapse in case of defective function of the return temperature increase (return temperature in controlled operation below 55°C).

Chimney

A chimney according to provisions, reviewed by the chimney sweep and adjusted to the boiler output is the prerequisite for proper operation of the system. If the chimney is subject to too high a conveyor pressure, the boiler cannot be operated properly in the weak load area anymore! The exhaust routing (smoke collection) must be performed so that it is suitable for an exhaust temperature/room temperature difference of < 160 K (corrosion-resilient design). The connection piece (connection between boiler and chimney) and the chimney must have at least the same diameter as the flue tube connection at the boiler. Also observe that the connection piece is placed rising!

Connection to the chimney:

According to TRVB-H118, a deflagration flap (explosion flap) must be installed in the connection from the boiler to the chimney. At an increased conveyor pressure (chimney draft), it must be designed as a combination energy-saving draft controller with explosion flap. Setting the energy savings draft controller is sensible only at outdoor temperatures of less than +5°C; the system should be in operation for at least 1 hour at this time. Before measurement, observe that the system runs in the rated load area. Measure conveyor pressure between boiler and energy savings draft controller (measuring distance from the boiler 3 x flue tube diameter if possible).

Then set the energy savings draft controller to the respective value. (Note: chimney draft changes with changed output. Too high conveyor pressure accelerates combustion. The exhaust temperature is artificially increased.

Bad output adjustment and increased discharge of dust are the consequence. Too low conveyor pressure leads to output problems and incomplete combustion conduct!

Buffer storage

Operation of the Boiler with a Buffer Storage

The heating system is also designed for operation with a buffer storage. Observe the local and/or national directives and conveyor programmes for the storage size.

Requirements to the Heating/Storage Room

Fire protection Austria:

The heating room and the storage room must be executed and designed acc. to TRVB H118 and ÖN H 5170. Furthermore, the building-law and fire-protection-technical local provisions must be observed. In many cases, fire-resilient walls REI 90 (F90) and usually also fire protection doors EI₂90-C (T90) for the heating room are prescribed.

Fire protection Germany:

The heating room and the storage room must be executed acc. to MFeuVO. From 50 kW upwards, special fire protection provisions apply to the heating room. Furthermore, the building-law and fire-protection-technical local provisions must be observed.

The most frequent installation version of chopped goods system corresponds to figure 3 acc. to TRVB H118.

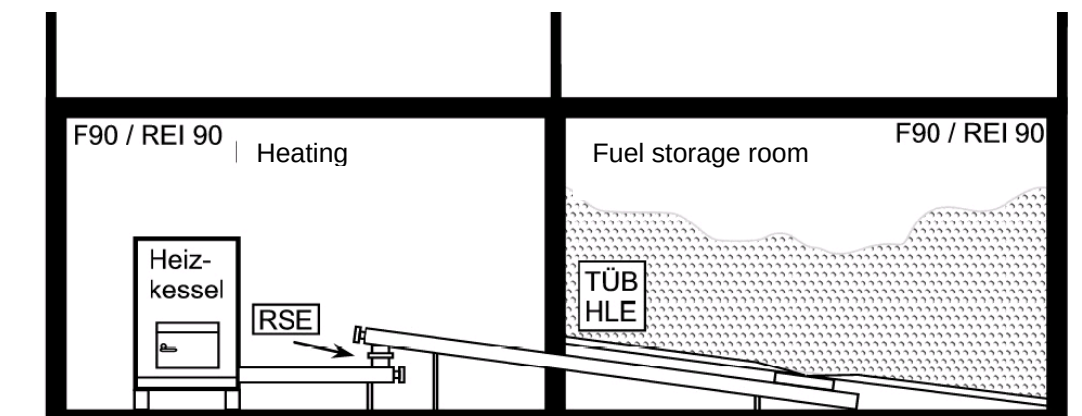


Figure 3: Automatic discharge from the fuel storage room (5.1.3) heating output ≤ 400 kW
 Storage quantity $> 50\text{m}^3 \leq 200\text{m}^3$ – fuel pursuant to item 3.1 (chopped material)
 The HLE may be dispensed with at a storage amount of $\leq 50\text{m}^3$
 Source: pr TRVB H 118 - Ausgabe 2003

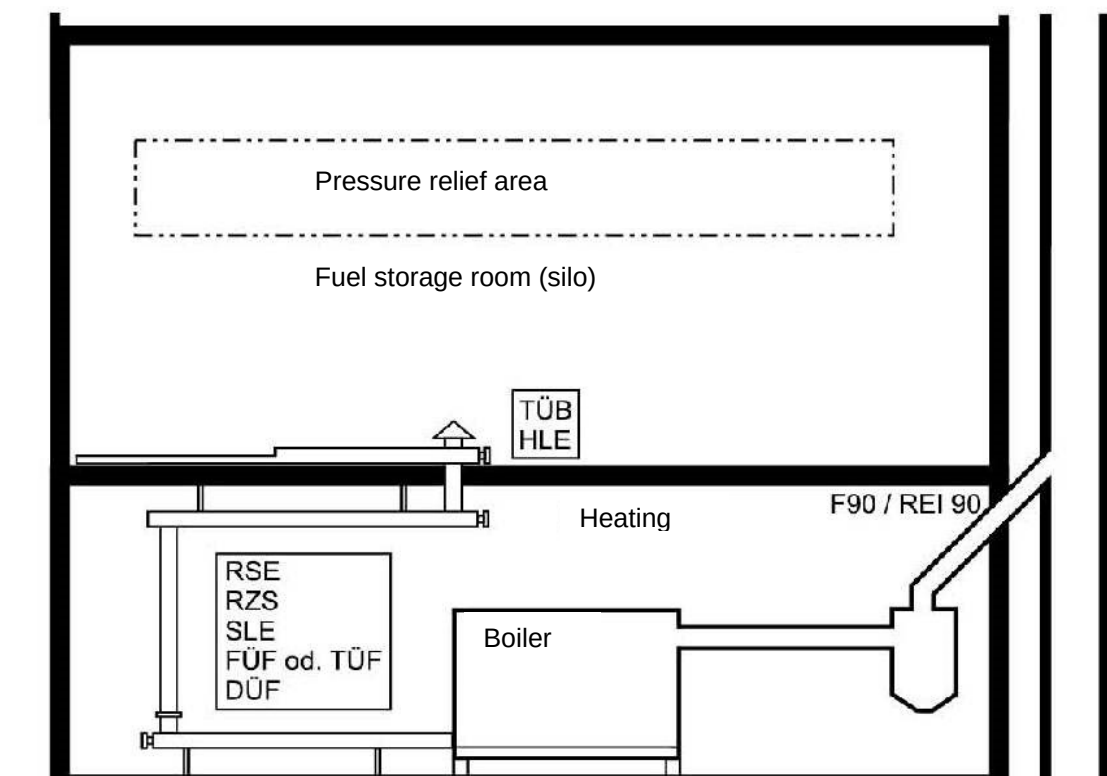


Figure 6: Automatic discharge from the silo above, heating output $> 400\text{kW}$ or
 stored amount $> 200\text{m}^3$ – fuel pursuant to item 3.1 (chopped material) and 3.3 (other wood
 residue)
 Source: pr TRVB H 118 - Edition 2003

An installation version of pellet systems corresponds to figure 8 acc. to TRVB H118.

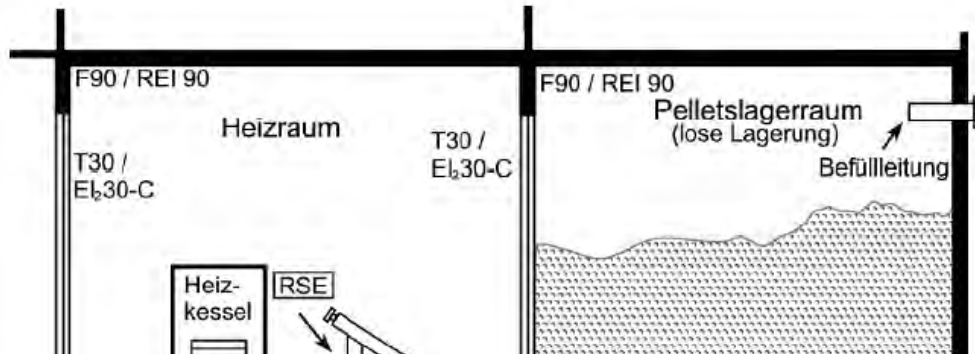


Figure 8: Automatic discharge from the fuel storage room (5.1.3, loose storage)
Heat output ≤ 150 kW and storage amount $\leq 50\text{m}^3$ - fuel according to

Attention: Acc. to TRVB 118, fuel storage in pellet systems with $>150\text{kW}$ or $>50\text{m}^3$ is a "special construction that must be separately inspected by a test office!"

Backburn-proof unit (RSE; Rückbrandsichere Einheit):

The backburn-proof units delivered by Lindner & Sommerauer have been inspected by the IBS-Linz with the following test numbers:

	Type designation	Test number
Discharge head standard	SLH 30 -150	00015201
Discharge head G50-industry	G50-industry	10070830
Discharge head for riser screw	SLH 12	3432/94
Rotary feeder	Rotary feeder SLHZ	11125/2

Temperature monitoring device (TÜB; Temperaturüberwachungseinrichtung):

Temperature sensor above the conveyor channel that will start up the warning device(s) when a temperature of 70°C is exceeded (to be installed by the E-installer)

Extinguishing facility to be triggered manually (HLE; Händisch auszulösende Löscheinrichtung):

Empty pipes, minimum width DN 20mm; It must be installed right above the conveyor duct for the best extinguishing success in case of fire (to be installed by the heating installer).

Independently triggering extinguishing device (SLE; Selbsttätig auslösende Löscheinrichtung):

Must be installed to reliably recognise backburning and to start extinguishing without delay; The extinguishing water amount must correspond to three times the supply duct, but at least 20l. The extinguishing water must be introduced so that the supply opening is not clogged by operation.

Backburn protection (RZS: Rückzündsicherung):

Wood-fuelled systems where there is a danger of backburn from sparks or flammable gases flowing into the conveyor line must be equipped with these facilities.

Temperature monitoring facility in the combustion chamber (TÜF: Temperaturüberwachungseinrichtung im Feuerraum):

When a specific threshold temperature is undercut, the fuel supply is stopped and the system switches off automatically.

Pressure monitoring facility in the combustion chamber (DÜF: Drucküberwachungseinrichtung im Feuerraum):

If a defined pressure limit is exceeded or undercut, the system is switched off automatically after a specified time.

Escape switch, emergency off switch:

- In **Austria**, an escape or emergency off switch must be installed outside of the heating room in the access area.
- In **Germany**, the legislator does not require an emergency off switch outside of the heating room, but from 50 kW onwards it can be prescribed by the authority in accordance with the rules for oil and gas boilers.

Fire extinguishers:

- In **Austria**, at least one ABC fire extinguisher must be installed as first extinguishing aid in the access area (6 kg powder / 12 LE).
- In Germany, fire extinguishers for commercial and public buildings are provided for by the law. For heating systems in the private area, fire extinguishers are not required. They are still recommended.

Venting and ventilation

- In **Austria** (according to ÖNORM H 5170), 2 cm² per kW fuel heat output but at least 200 cm² open cross-section are required for the supply air (rated heat output/efficiency = fuel heat output, e.g.: 30 kW / 93.3 % = 32.2 kW).
Up to 100 kW rated heat output, the exhaust requires a free cross-section of at least 180 cm², and another 1 cm² for every additional kW. For wire grids, there is a surcharge of 20% of the minimum area. If the air is supplied through ducts that are longer than one meter, mathematical proof must be rendered by a specialist.



- In **Germany** (according to the fuel regulation), combustion sites with a rated output of up to 35 kW require a combustion air opening leading directly outside with at least 150 cm² or 2x 75 cm², or a door/window leading outside and a volume of at least 4 m³ per kW rated heat output is required. If the site of setup does not border on an outer wall, a combustion air compound is possible instead. For this, the combustion air is supplied to an adjacent room of sufficient size at the outer wall.
- From 35 – 50 kW, at least 150 cm² free ventilation cross-section, as of 50 kW, ventilation and venting each at least 150 cm² free cross-section +2 cm² per kW across 50 kW are required.
- For grids at least 20% surcharge;
- At air guidance through ducts, much larger cross-sections (about 50 – 150% larger) must be calculated.

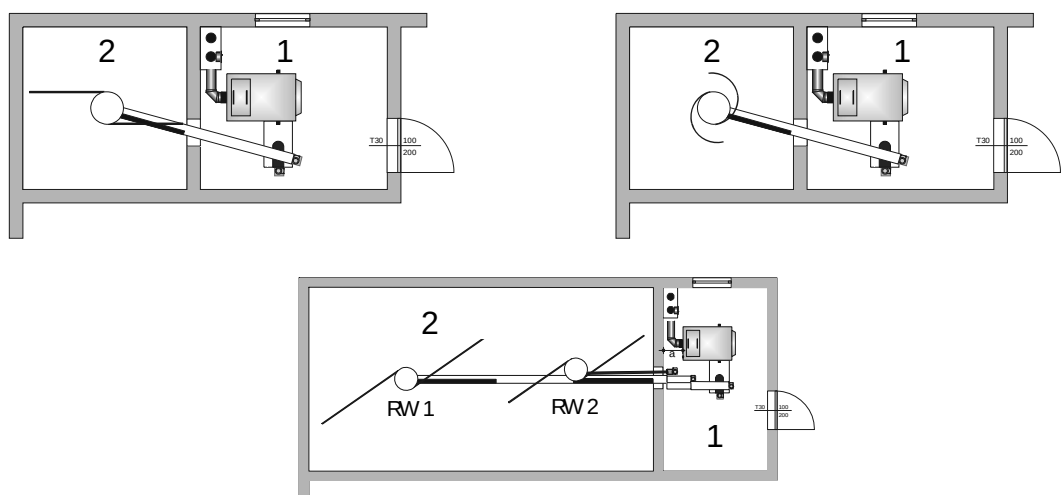
Instructions on Filling of the Storage Space:

When filling with fuel, observe the following:

The chopped goods are strongly condensed specifically when blowing in. Observe that the chopped goods are blown against a baffle wall and the material falls loosely into the storage room.

Proceed as follows when filling the storage room:

First only fill in enough material to cover the agitator by approx. one meter. Switch the system to manual operation; open the back fire flap with the button "up"; after approx. 2 minutes, the conveyor motor can be started by pressing the button "Before" can be driven forward for about 3 minutes. This coils the spring blades around the rotor and the screw can turn easily again. Now you can fill the storage room. From a storage size of 3.5 m x 3.5 m onwards, the height of the upper edge of the chamber discharge channel must have a bottom to prevent twisting of the spring blades. Compaction of the material and driving on the chopped material in the storage room are not permitted.



1.....Heating room

2.....Chopped material storage room

RW 1 and RW 2 must be operated separately. RW 2 must only switch on when the storage room at RW 1 is empty. Switch on RW 1 and RW 2 when filling!!!

Fuel Value Depending on Water Content (Chopped Material)

The more water is contained in the wood, the lower its fuel value, since the water will evaporate in the course of combustion and heat will be consumed. The evaporation heat for 1 kg water is approx. 0.68 kWh (2.44 MJ). Since two expressions are often swapped in practical use, they should be explained. The water content (w) of wood is the mass of water referring to the total mass in percent (conventionally: fresh weight). The wood moisture (u) is the mass of water in relation to the dry mass (absolute dry substance = pure wood mass without water) in percent.

The Following Interrelations Apply (Chopped Material):

Water content (w) %	10	15	20	25	30	35	40		50		60
Moisture (u) %	11.1	17.6	25.0	33.3	42.9	53.8	66.7		100		150
Moisture (u) %	10	20	30	40	50	60	70	80	100	125	150
Water content (w) %	9.1	16.6	23.1	28.5	33.3	37.5	41.2	44.4	50	55.6	60

Example: Wood "fresh from the forest", in which it is assumed that half its weight is made up of pure wood mass and water each, thus has a water content (w) of 50 % or a moisture (u) of 100 %. The following will only refer to water content (w). The influence of water content (w) on the fuel value (Hu) can be briefly characterised as follows. Referring to the weight unit, the difference of the individual wood types in the fuel value is negligible.

For calculations, the heating value for all wood types can be assumed to have an average of 5.2 kWh/kg = 19 MJ/kg dry substance (AT).

The fuel value (Hu) will change according to water content.

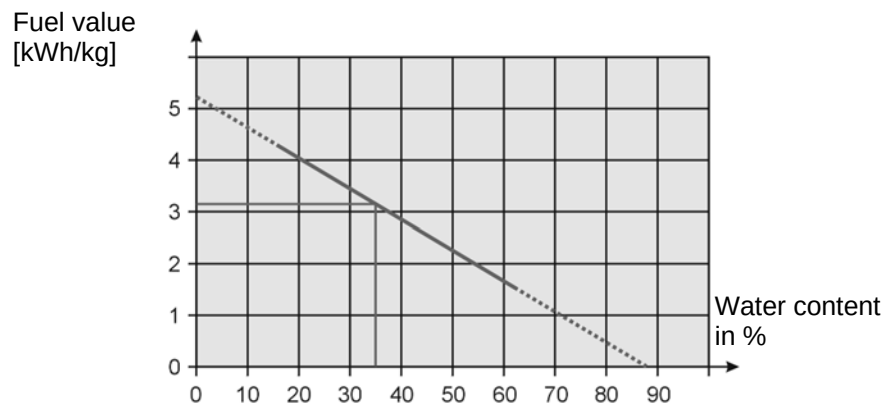


Condition of the Wood

	Water content (w)	Fuel value (Hu)
fresh from the forest	50 – 60 %	2.0 kWh/kg = 7.1 MJ/kg
stored over summer	25 – 35 %	3.4 kWh/kg = 12.2 MJ/kg
stored over several years	15 – 25 %	4.0 kWh/kg = 14 MJ/kg

The graph below shows the fuel value (Hu) in dependence on the water content. The useful energy content drops very clearly with increasing water content!

Example: At a water content of 35% the fuel value is at 3,15 kWh per kg wood



Technical Data Chopped Material SL T/2R Boiler:

	SL 25 T/2R	SL 30 T/2R	SL 40 T/2R	SL 49 T/2R	SL 50 T/2R
Rated output (kW)	25	27	44	49	50
Output range	7.6 – 25	7.6 – 30	12.9 – 40	14 – 49	14 – 50
Efficiency (rated output)	90.7	90.7	-	92.7	92.7
Efficiency (smallest output)	90.9	90.9	-	94.5	94.5
Test office/no.	TÜV Süd LGA Austria	TÜV Süd LGA Austria	TÜV Süd LGA Austria	TÜV Süd LGA Austria	TÜV Süd LGA Austria

Width (mm)	630	630	770	770	770
Depth (mm)	905	905	905	905	905
Height (mm)	1430	1430	1530	1530	1530
Weight with installed burner (kg)	515	515	615	615	615
Boiler class	5	5	5	5	5
Water content (litres)	72	72	96.5	96.5	96.5
Water-side resistance (10K/20K) (mbar)	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35
Flue tube connection (mm)	180	180	180	180	180
Height to flue pipe middle (mm)	1225	1225	1330	1330	1330
ø Lead/return (inch)	6/4"	6/4"	6/4"	6/4"	6/4"
Height to lead middle (mm)	1300	1300	1400	1400	1400
Height to return middle (mm)	535	535	535	535	535
Setting temperature controller (STB)	90°C	90°C	90°C	90°C	90°C

Exhaust mass flow	0.013/0.006	0.015/0.007	0.024/0.012	0.024/0.009	0.024/0.009
Rated load/partial load (kg/s)					
Req. conveyor pressure (mbar)	0.08	0.08	0.08	0.08	0.08
Exhaust temperature					
Rated/partial load (°C)	151 / 80	151 / 80	-	141 / 76	141 / 76
O ₂ concentration rated load/partial load [%-Vol.]	7.4 / 11.6	7.4 / 11.6	-	7.4 / 11.6	7.4 / 11.6

Ash drawer front (litres)	34.5	34.5	34.5	35.4	35.4
Ash drawer rear (litres)	15	15	15	15	15

Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket				
Igniter (W)	1600	1600	1600	1600	1600
Suction draft (W)	32	32	32	32	32
Current consumption Wh					
Rated load/partial load/standby	511 / - / 18	511 / - / 18	-	565 / - / 18	565 / - / 18
Current consumption % for rated load	0.3	0.3	-	0.19	0.19

Noise emission	< 70dB A	< 70dB A	< 70dB A	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!

Technical Data Chopped Material SL T/4R Boiler:

	SL 30 T/4R	SL 40 T/4R	SL 49 T/4R	SL 50 T/4R	SL 65 T/4R
Rated output (kW)	30	40	49	50	65
Output range	8,2 – 30	8,2 – 40	13,8 – 49	13,8 – 50,1	13,8 – 63,7
Efficiency (rated output)	93,1	92,7	92,1	92,1	91,3
Efficiency (smallest output)	93,0	93,0	92,6	92,6	92,6
Test office/no.	BLT Wieselburg	BLT Wieselburg	BLT Wieselburg	BLT Wieselburg	BLT Wieselburg

Width (mm)	630	630	770	770	770
Depth (mm)	1050	1050	1050	1050	1050
Height (mm)	1330	1430	1430	1430	1530
Weight with installed burner (kg)	555	595	675	675	740
Boiler class	5	5	5	5	5
Water content (litres)	73	87,5	110	110	116
Water-side resistance (10K/20K) (mbar)	1,40 / 0,35	1,40 / 0,35	1,40 / 0,35	1,40 / 0,35	17,2 / 4,3
Flue tube connection (mm)	180	180	180	180	200
Height to flue pipe middle (mm)	650	650	650	650	650
Ø Lead/return (inch)	6/4"	6/4"	6/4"	6/4"	6/4"
Height to lead middle (mm)	1200	1300	1300	1300	1410
Height to return middle (mm)	535	535	535	535	535
Setting temperature controller (STB)	90°C	90°C	90°C	90°C	90°C

Exhaust mass flow Rated load/partial load (kg/s)	0,017/0,11	0,021/0,11	0,026/0,10	0,026/0,10	0,033/0,17
Req. conveyor pressure (mbar) Rated load/partial load	0,08	0,08	0,08	0,08	0,08
Exhaust temperature rated/partial load (°C)	107 / 60	127 / 60	111 / 68	111 / 68	125 / 68
O ₂ concentration rated load/partial load [%-Vol.]	6,6 / 14,0	6,4 / 12,6	5,6 / 10,3	5,6 / 10,3	5,0 / 10,3

Ash drawer front (litres)	34,5	34,5	35,4	35,4	35,4
Ash drawer rear (litres)	24,2	24,2	24,2	24,2	24,2

Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket				
Igniter (W)	1600	1600	1600	1600	1600
Suction draft (W)	32	32	32	32	72
Current consumption Wh Rated load/partial load/standby	167 / - / 18	167 / - / 18	167 / - / 18	167 / - / 18	267 / - / 18
Current consumption % for rated load	0,56	0,41	0,34	0,33	0,41

Noise emission	< 70dB A	< 70dB A	< 70dB A	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!

Technical Data Chopped Material SL T/4R Boiler:

	SL 80 T/4R	SL 99 T/4R	SL 110 T/4R	SL 150 T/4R
Rated output (kW)	80	99	110	150
Output range	23.7 – 76.3	23.7 – 104.9	23.7 – 104.9	43.6 – 154.1
Efficiency (rated output)	92.8	91.3	91.3	90.4
Efficiency (smallest output)	92.7	92.7	92.7	92.2
Test office/no.	BLT Wieselburg	BLT Wieselburg	BLT Wieselburg	BLT Wieselburg

Width (mm)	870	870	870	1050
Depth (mm)	1265	1265	1265	1465
Height (mm)	1520	1620	1620	1810
Weight with installed burner (kg)	920	980	980	1405
Boiler class	5	5	5	5
Water content (litres)	120	190	190	340
Water-side resistance (10K/20K) (mbar)	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35	34.4 / 8.6
Flue tube connection (mm)	200	200	200	250
Height to flue pipe middle (mm)	620	620	620	640
Ø Lead/return (inch)	6/4"	6/4"	6/4"	2"
Height to lead middle (mm)	1390	1490	1490	1675
Height to return middle (mm)	535	535	535	545
Setting temperature controller (STB)	90°C	90°C	90°C	90°C

Exhaust mass flow Rated load/partial load (kg/s)	0.039/0.021	0.056/0.021	0.056/0.021	0.088/0.036
Req. conveyor pressure (mbar) Rated load/partial load	0.08	0.08	0.08	0.15 / 0.08
Exhaust temperature rated/partial load (°C)	127 / 72	159 / 72	159 / 72	159 / 79
O ₂ concentration rated load/partial load [%-Vol.]	6.3 / 12.6	5.8 / 12.6	5.8 / 12.6	7.3 / 11.3

Ash drawer front (litres)	51.2	51.2	51.2	74.1
Ash drawer rear (litres)	34.3	34.3	34.3	50.4

Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket			
Igniter (W)	1600	1600	1600	1600
Suction draft (W)	72	72	72	72
Current consumption Wh Rated load/partial load/standby	367 / - / 18	417 / - / 18	417 / - / 18	583 / - / 18
Current consumption % for rated load	0.46	0.42	0.38	0.39

Noise emission	< 70dB A	< 70dB A	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!

Technical Data Chopped Material SL T/6R Boiler:

	SL 199 T/6R	SL 200 T/6R	SL 250 T/6R
Rated output (kW)	199	200	245
Output range	70 – 199	70 – 200	70 – 245
Efficiency (rated output)	-	-	91.1
Efficiency (smallest output)	-	-	95.3
Test office/no.	TÜV Süd LGA Austria	TÜV Süd LGA Austria	TÜV Süd LGA Austria

Width (mm)	1175	1175	1175
Depth (mm)	2630	2630	2630
Height (mm)	1800	1800	1800
Weight with installed burner (kg)	2100	2100	2100
Boiler class	5	5	5
Water content (litres)	390	390	390
Water-side resistance (10K/20K) (mbar)	44 / 11	44 / 11	44 / 11
Flue tube connection (mm)	250	250	250
Height to flue pipe middle (mm)	1370	1370	1370
Ø Lead/return (inch)	2.5"	2.5"	2.5"
Height to lead middle (mm)	1630	1630	1630
Height to return middle (mm)	830	830	830
Setting temperature controller (STB)	90°C	90°C	90°C

Exhaust mass flow			
Rated load/partial load (kg/s)	0.165/0.055	0.165/0.055	0.165/0.055
Req. conveyor pressure (mbar)			
Rated load/partial load	0.08	0.08	0.08
Exhaust temperature rated/partial load (°C)	-	-	165 / 76
O ₂ concentration rated load/partial load [%-Vol.]	-	-	6.8 / 8.6

Ash removal	automatic	automatic	automatic
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Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket		
Igniter (W)	1600	1600	1600
Suction draft (W)	2 x 180	2 x 180	2 x 180
Current consumption Wh			
Rated load/partial load/standby	- / - / 18	- / - / 18	599 / - / 18
Current consumption % for rated load	0.46	0.42	0.38

Noise emission	< 70dB A	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!

Technical Data Pellets SL-P Boiler:

	SL-P 30	SL-P 40	SL-P 49	SL-P 50	SL-P 65
Rated output (kW)	30	40	49	50	65
Output range	9.3 – 30.8	9.5 – 40.0	11.0 – 45.9	14.0 – 50.0	14.0 – 65.0
Efficiency (rated output)	92.8	-	94.0	-	-
Efficiency (smallest output)	93.9	-	92.9	-	-
Test office/no.	TÜV Süd LGA Austria	TÜV Süd LGA Austria	BLT Wieselburg	TÜV Süd LGA Austria	TÜV Süd LGA Austria

Width (mm)	630	630	770	770	770
Depth (mm)	1050	1050	1050	1050	1050
Height (mm)	1330	1430	1430	1430	1530
Weight with installed burner (kg)	555	595	675	675	740
Boiler class	5	5	5	5	5
Water content (litres)	73	87.5	110	110	116
Water-side resistance (10K/20K) (mbar)	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35	17.2 / 4.3
Flue tube connection (mm)	180	180	180	180	200
Height to flue pipe middle (mm)	650	650	650	650	650
ø Lead/return (inch)	6/4"	6/4"	6/4"	6/4"	6/4"
Height to lead middle (mm)	1200	1300	1300	1300	1410
Height to return middle (mm)	535	535	535	535	535
Setting temperature controller (STB)	90°C	90°C	90°C	90°C	90°C

Exhaust mass flow					
Rated load/partial load (kg/s)	0.016/0.008	0.021/0.010	0.023/0.013	0.023/0.013	0.031/0.012
Req. conveyor pressure (mbar)	0.08	0.08	0.08	0.08	0.08
Rated load/partial load					
Exhaust temperature	133 / 73	-	90 / 64	-	-
Rated/partial load (°C)					
O ₂ concentration rated load/partial load [%-Vol.]	7.6 / 12.5	-	5.8 / 11.7	-	-

Ash drawer front (litres)	34.5	34.5	35.4	35.4	35.4
Ash drawer rear (litres)	24.2	24.2	24.2	24.2	24.2

Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket				
Igniter (W)	1600	1600	1600	1600	1600
Suction draft (W)	32	32	32	32	72
Current consumption Wh	59 / - / 18	- / - / 18	167 / - / 18	- / - / 18	- / - / 18
Rated load/partial load/standby					
Current consumption % for rated load	0.2	-	0.34	-	-

Noise emission	< 70dB A	< 70dB A	< 70dB A	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!

Technical Data Pellets SL-P Boiler:

	SL-P 80	SL-P 99	SL-P 110	SL-P 150
Rated output (kW)	80	99	110	150
Output range	24.0 – 80.0	24.0 – 99.0	24.0 – 110.0	39.3 – 146.7
Efficiency (rated output)	-	-		92.6
Efficiency (smallest output)	-	-		95.6
Test office/no.	TÜV Süd LGA Austria	TÜV Süd LGA Austria	TÜV Süd LGA Austria	TÜV Süd LGA Austria

Width (mm)	870	870	870	1050
Depth (mm)	1265	1265	1265	1465
Height (mm)	1520	1620	1620	1810
Weight with installed burner (kg)	920	980	980	1405
Boiler class	4	4	4	4
Water content (litres)	120	190	190	340
Water-side resistance (10K/20K) (mbar)	1.40 / 0.35	1.40 / 0.35	1.40 / 0.35	34.4 / 8.6
Flue tube connection (mm)	200	200	200	250
Height to flue pipe middle (mm)	620	620	620	640
ø Lead/return (inch)	6/4"	6/4"	6/4"	2"
Height to lead middle (mm)	1390	1490	1490	1675
Height to return middle (mm)	535	535	535	545
Setting temperature controller (STB)	90°C	90°C	90°C	90°C

Exhaust mass flow				
Rated load/partial load (kg/s)	0.038/0.020	0.059/0.021	0.059/0.021	0.079/0.029
Req. conveyor pressure (mbar)	0.08	0.08	0.08	0.15 / 0.08
Rated load/partial load				
Exhaust temperature rated/partial load (°C)	-	-	-	148 / 77
O ₂ concentration rated load/partial load [%-Vol.]	-	-	-	7.8 / 11.5

Ash drawer front (litres)	51.2	51.2	51.2	74.1
Ash drawer rear (litres)	34.3	34.3	34.3	50.4

Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket			
Igniter (W)	1600	1600	1600	1600
Suction draft (W)	72	72	72	72
Current consumption Wh				
Rated load/partial load/standby	- / - / 18	- / - / 18	- / - / 18	83 / - / 18
Current consumption % for rated load	-	-	-	0.3

Noise emission	< 70dB A	< 70dB A	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!

Technical Data Pellets SL-P Boiler:

	SL-P 199 Pellets	SL-P 250 Pellets
Rated output [kW]	199	245
Output range [kW]	70-199	70-245
Efficiency rated output [%]	-	91.8
Efficiency of smallest output [%]	-	95.3
Test office/no.	TÜV Süd LGA Austria	TÜV Süd LGA Austria

Width [mm]	1175	1175
Depth [mm]	2630	2630
Height [mm]	1800	1800
Weight with installed Burner [kg]	2100	2100
Boiler class	5	5
Water content [litres]	390	390
Water-side resistance 10K/20K [mbar]	44 / 11	44 / 11
Flue tube connection [mm]	250	250
Height flue tube [mm]	1370	1370
Ø Lead/return [inch]	2.5"	2.5"
Height to lead middle [mm]	1630	1630
Height to return middle [mm]	830	830
Setting temperature controller	90°C	90°C

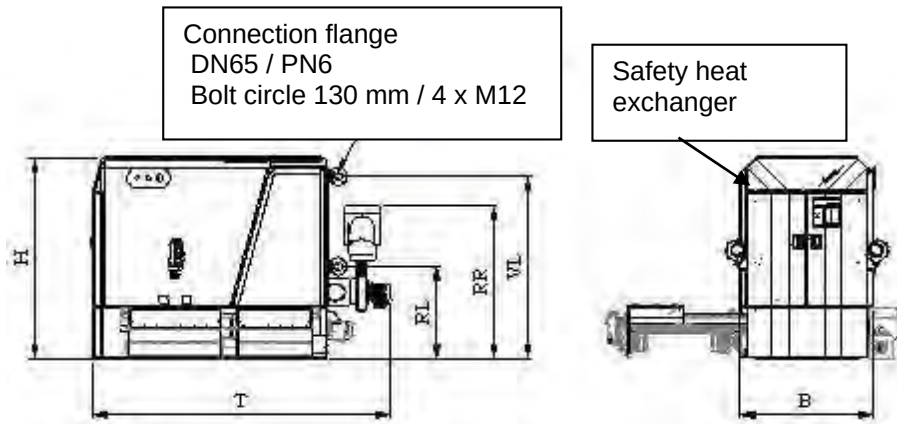
Exhaust mass flow rated load/partial load [kg/s]	0.150/0.049	0.150/0.049
Req. conveyor pressure 160 °C [mbar] Rated load/partial load	0.25 / 0.18	0.25 / 0.18
Exhaust temperature rated/partial load [°C]	-	154 / 67
O ₂ concentration rated load/partial load [%-Vol.]	-	6.9 / 8.9

Ash removal	automatic	automatic
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Electr. connection	400V / 16A / 50Hz / 2800W CCE-socket	
Igniter [W]	1600	1600
Suction draft [W]	2 x 180	2 x 180
Current consumption Wh Rated load/partial load/standby	-	398 / 132 / 18
Current consumption % for rated load	-	0.16%

Noise emission	< 70dB A	< 70dB A
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Technical changes, typesetting and print errors reserved!



Attention: A ½" cold water connection must be provided for the safety heat exchanger integrated in the boiler. The heat exchanger must be connected to the cold water network before initial commissioning. At the safety heat exchanger, a water pressure of at least 2 bar and a water temperature of no more than 15°C according to EN 303-5 must be pending.

The installer must choose valves to ensure that the discharge of excess heat starts at a boiler temperature of 100°C.

The heat discharge must not be impaired in any manner at power failure!

Alternatively, the safety heat exchanger may also be installed and connected on the opposite side.

Technical changes reserved!

Cleaning Instructions for boilers SL 25 T/2R to SL 150 T/4R SL-P 30 to SL-P 150

1. Go into "Dauerbetrieb" (permanent operation); switch off the heater by pressing the "Aus" (Off) button. Safeguard the heater against an on-signal sent by an external controller. Let the heater cool down until there are no glowing embers left.
2. Change to "Handbetrieb" (manual operation).
3. Switch off the main power switch and safeguard it against switching it on again (use, for example, a padlock).
4. Clean the combustion chamber.

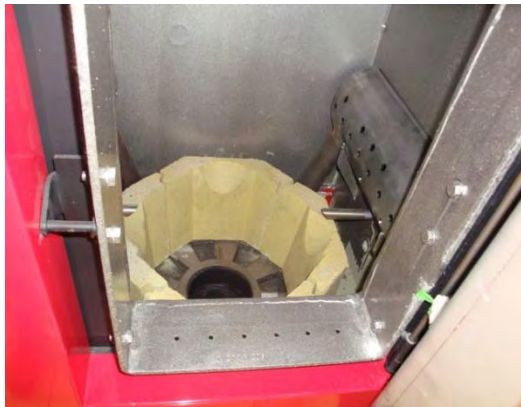


Fig. 1

Open the heater door only when the heater is cold.
at the front



Fig. 2

Remove the shaped bricks (start with the brick
or with the one at the back).



Fig. 3

Remove any ash, soot and any other deposits from
the combustion chamber using a hand brush.
Remove any ash from around the grate using a vacuum
cleaner. Otherwise you will not be able to place the
shaped bricks back to their correct positions.

Vacuum the light barrier tubes and
check if they are clean.

When placing the shaped bricks back into the heater proceed as follows: Start with the brick at the back, then place the two bricks at the side and finally place the brick at the front.

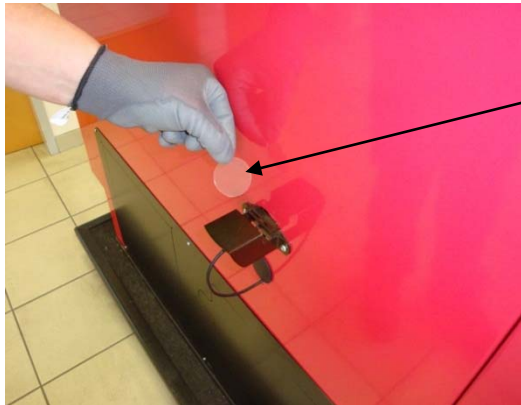


Fig. 4

Remove any contamination from the light barrier's two protecting glasses.

5. Clean the heat exchanger.



Fig. 5

Open the cover plate.



Fig. 6

Loosen the butterfly nuts.



Fig. 7

Remove the guide plate.



Fig. 8

Scrape the surface with the ash scraper supplied in the accessory equipment.
Remove any ash from the heat exchanger using a hand brush or a vacuum cleaner.



Fig. 9



Fig. 10

Remove the cover plate.

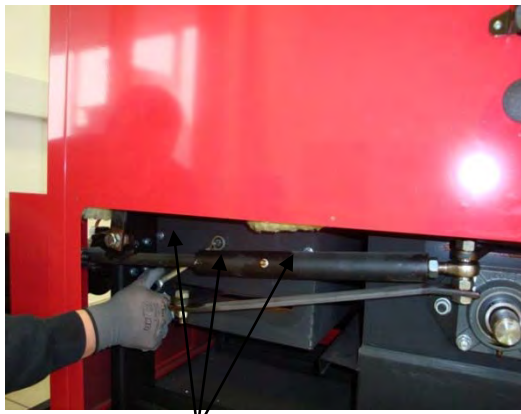


Fig. 11

Loosen all three nuts and remove the lid.
exchanger



Fig. 12

Remove any fly ash from under the heat
and in the flue gas tube using a vacuum cleaner
(dismantle the suction draught fan in the flue gas
pipe if there is too much ash).



Fig. 13

View from below into the heat exchanger

Remove any fly ash in the flue gas pipe using a vacuum cleaner.



Fig. 14

Slightly lift the lid while dismantling.
grease.
Care must be taken in not rubbing the lid
against the cleaning bars.
Attention: Close the lid tightly → leak air

Mount the cover plate again.

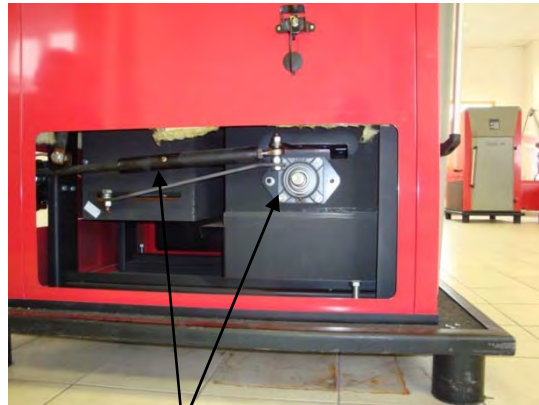


Fig. 15

Grease the lubricating nipples with hot bearing

6. Lubricate with hot bearing grease.



Fig. 16

Lubricate the lower bearing
(when there is an ascending screw).



Fig. 17

Lubricate the upper screw bearing.



Fig. 18

Lubricate the stoker
screw bearing.

7. Check the backfire flap.

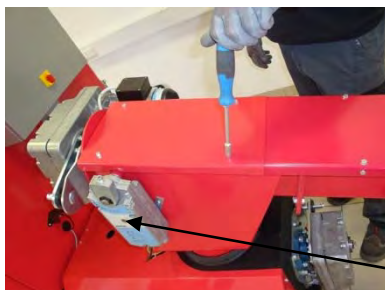


Fig. 19

Open the cover plate.



Fig. 20

Check if the motor is tightly connected to
the hexagon shaft and make sure that the flap
closes properly.



Fig. 21

Open the cover plate.

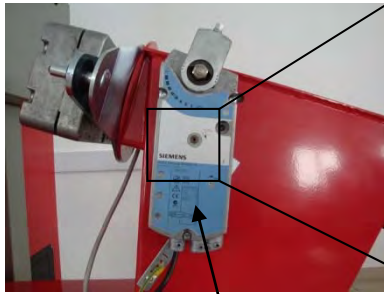


Fig. 22

Open the backfire flap using an Allen key.



Fig. 23

Fix to center position using a screwdriver.



Fig. 24

Remove any chipped wood and dust from the flap rear area.

Remove any coarse dirt from the seal and check it on flexibility. Replace it if need be.

When you open the flap further (in the indicated direction of the arrow) fixation is released and the flap closes.

Mount all the cover plates.

8. Remove ash from the suction draught fan.



Fig. 25

Loosen the nuts and remove the lid.

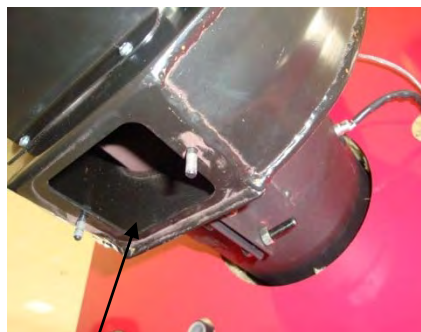


Fig. 26

Remove any ash and mount the lid again.

9. Empty the ash box.



Fig. 27

Switch on the heater, change to “Handbetrieb” (manual operation) and proceed with the manual cleaning.

Empty the ash box and push it back again.

Finally put the heater back into operation after having completed cleaning.

Cleaning instructions boilers SL 199 T/6R to SL 250 T/6R and SL-P 199 to SL-P 250

	The heater should be allowed <u>to cool prior to cleaning</u> in order to avoid burns. <u>Attention:</u> Do not put hot ash into flammable containers. Danger of fire!
	Secure heater against automatic start!

Repeat the quoted works every 6 month!

1. Go into "Dauerbetrieb" (permanent operation); switch off the heater by pressing the "Aus" (Off) button. Safeguard the heater against an on-signal sent by an external controller. Let the heater cool down sufficiently, in order to prevent danger of burning.
2. Change into "Handbetrieb" (manual operation).
3. Switch off the main power switch and safeguard it against switching it on again (for instance, use a padlock).
4. Clean the combustion chamber.



Fig. 1

Open the heater door only when the door, heater is cold and then remove the ash from above.
remove the shaped



Fig. 2

Open the maintenance openings below the heater
remove ash from the front area, then

bricks and vacuum any ash.
After removing the shaped bricks, take out the grate
and check for any damages.

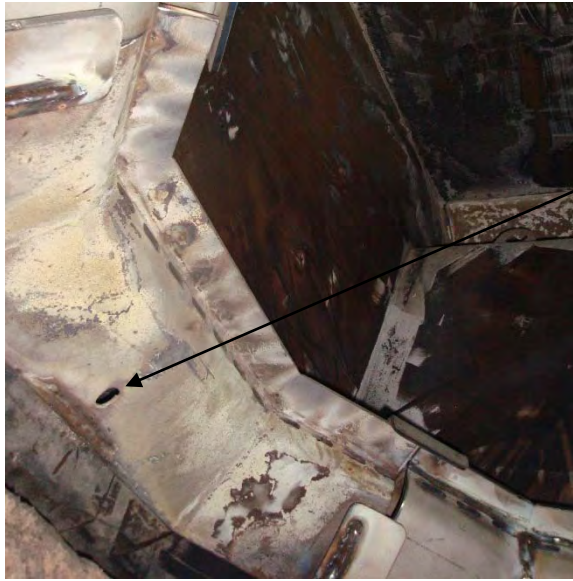


Fig. 3

On the bottom side of the left and the right post combustion device there is a drilled hole for monitoring the fill level in the combustion chamber. Check that both drilled holes are clean or clean them, if necessary. Remove any encrustations with a scraper or a brush and remove these from combustion chamber.

Note: Remove the shaped brick on the left front area (Fig. 2) first and reinsert this shaped brick at the end!

5. Clean the heat exchanger.



Fig. 4

Remove the two cover plates at the upper back area, loosen fittings at the lid of the heat exchanger and fold up. Lift up any cleaning turbulators, check for damages and afterwards let them fall back into the oven draughts.



Fig. 5 Remove guide plate



Fig. 6 Clean the rectangular tube-draughts and remove any ash on the upper side with an ash scraper and a brush.



Fig. 7

Check the seal at the heat exchanger cover.

Afterwards close the lid and screw together. Put any covers back in place.

6. Remove ash from the flue gas tube.



Fig. 8

Open the maintenance openings at the flue gas connection piece between heater and suction draught. Check, if any fly ash has collected in the tube and remove, if necessary. Then close the maintenance openings.

7. Lubricate the counter bearing of the stoker screw.



Fig. 9

Remove the lids of the ash removal unit-supply unit. Loosen maintenance cover to lubricate the counter bearing of the stoker screw. Lubricate the bearing.
Remount the maintenance cover.

Check the seals at the supply unit and replace, if necessary. Remove any major encrustations from the screw.

The maintenance procedure of ash removal from the heat exchanger is analogous to the procedure of ash removal from the heater.

8. Lubricate the bearing of ash screw.

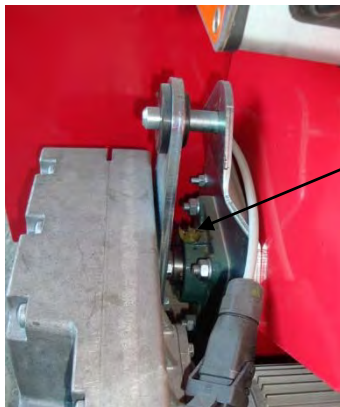


Fig. 10

Lubricate the bearing of the ash removal unit.

9. Lubricate the bearings of the heater ash removal unit and the shock absorbers.



Fig. 11



Fig. 12

Remove side panel and lubricate the six flange bearings and the shock absorber.



Fig. 13

Treat the chain with a chain spray and remount the side panel.

10. Lubricate the bearing of the discharge screw.

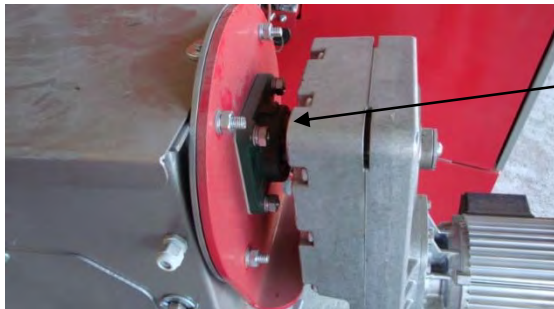


Fig. 14

Lubricate the bearing of the discharge screw.

11. Lubricate the bearing of the stoker screw.

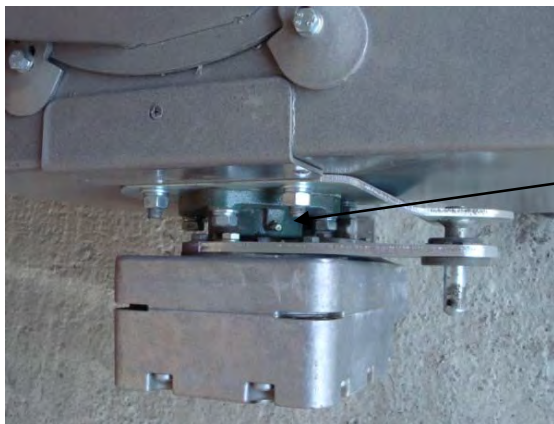


Fig. 15

Lubricate the bearing of the stoker screw.

12. Backfire flap



Fig. 16

Open the side lid of the discharge device and check if there are any foreign objects in the back area of the fire damper (wood chips, wood pellets etc.), which prevent the complete opening of the flap. If so, remove foreign objects. After the check, remount the side lid.



Fig. 17

Open the upper lid of the discharge device and check whether the seal is in good condition. If not, replace the seal. After the check, close the discharge device and screw together.

Check, if all protective devices are mounted and mount, if necessary. Switch on the heater, change to "Dauerbetrieb" (permanent operation) and go to "Reinigen" (cleaning) and carry out the cleaning. After having completed the cleaning, you can put the heater back into operation.

Explanation of the Operating Panel

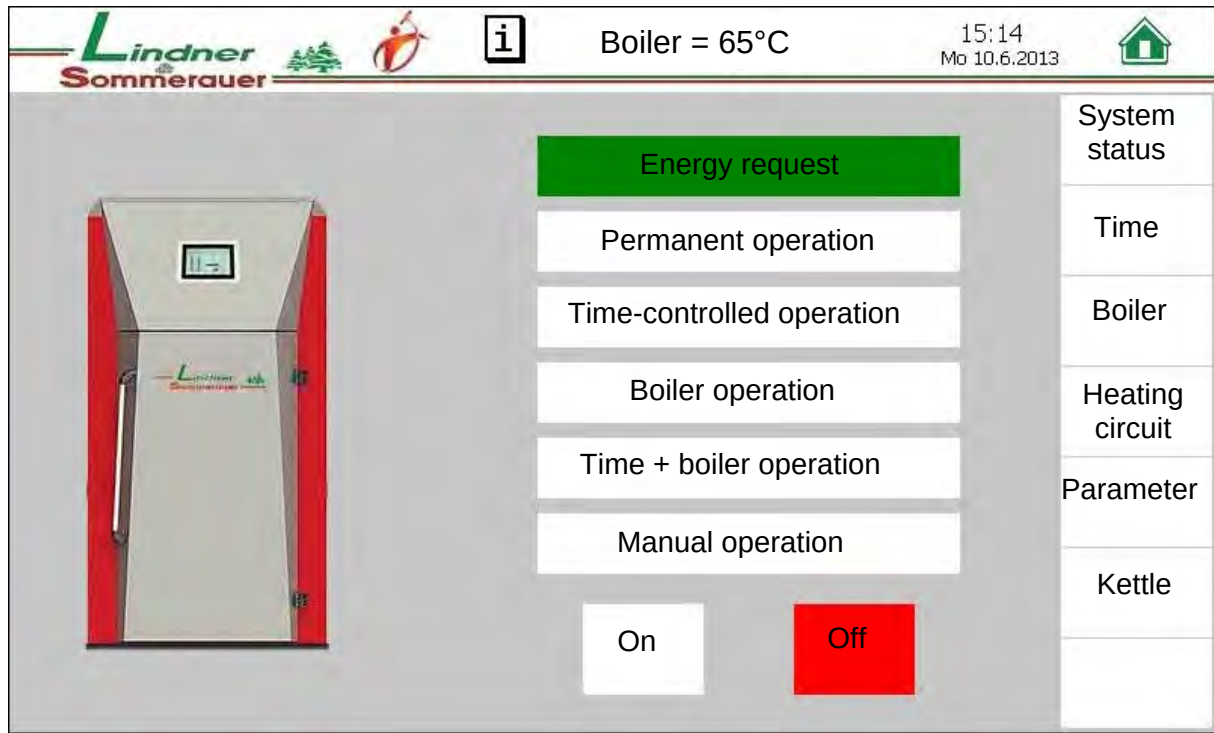


Fig. 100

The current operating mode is highlighted in green. If the boiler is "Off", the button is red. For "On", the button is green.

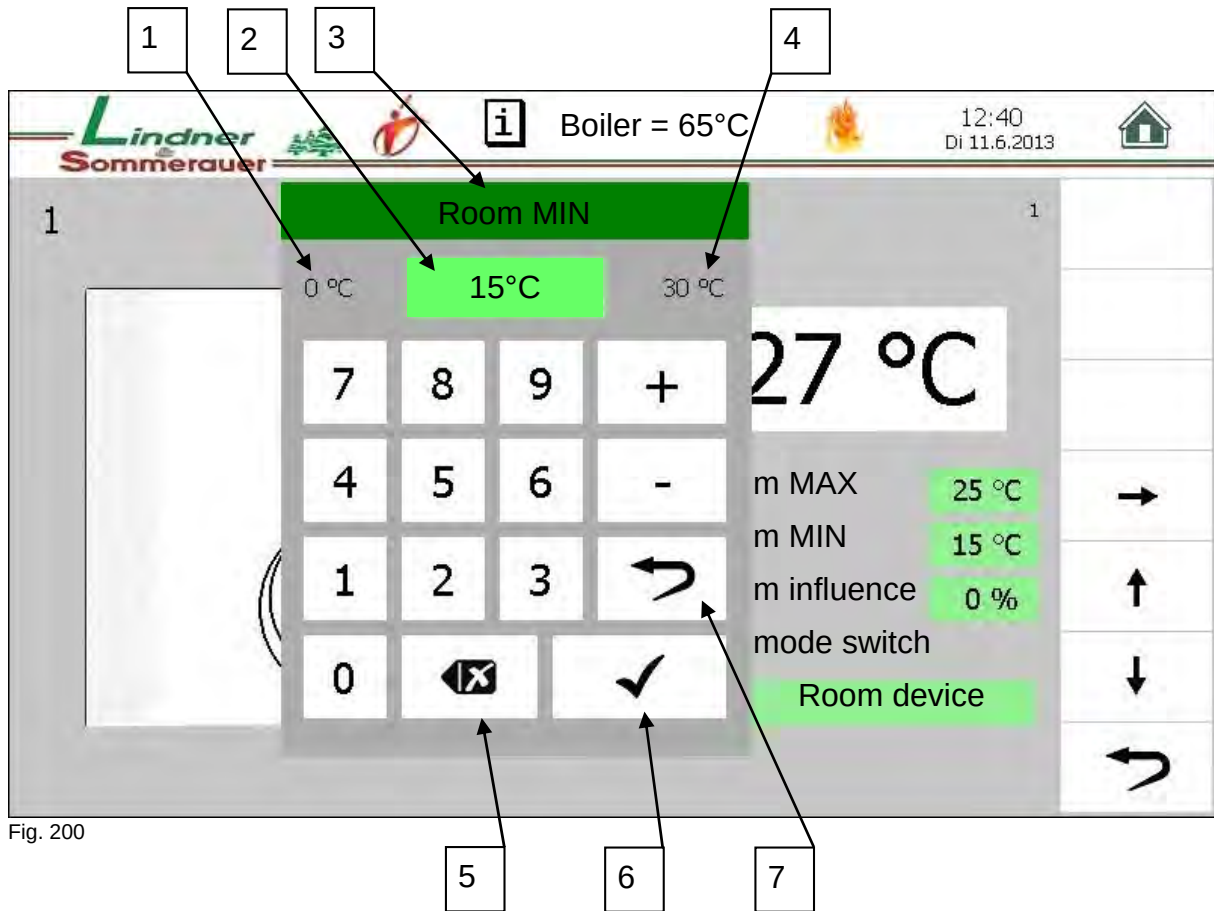


Fig. 200

Pushing the green button, e.g. "Room MIN", opens a dialogue window. The selected parameter (3) is displayed in the upper, dark-green area. In the middle below it there is the current setting (2). The setting can be changed using the keypad or the "+" and "-" buttons. The checkmark (6) saves the entry, the cross (5) deletes individual numbers and the "back arrow" (7) closes the window without saving.

The smallest (1) input value is located on the left side of the input field, the largest one (4) on the right side.

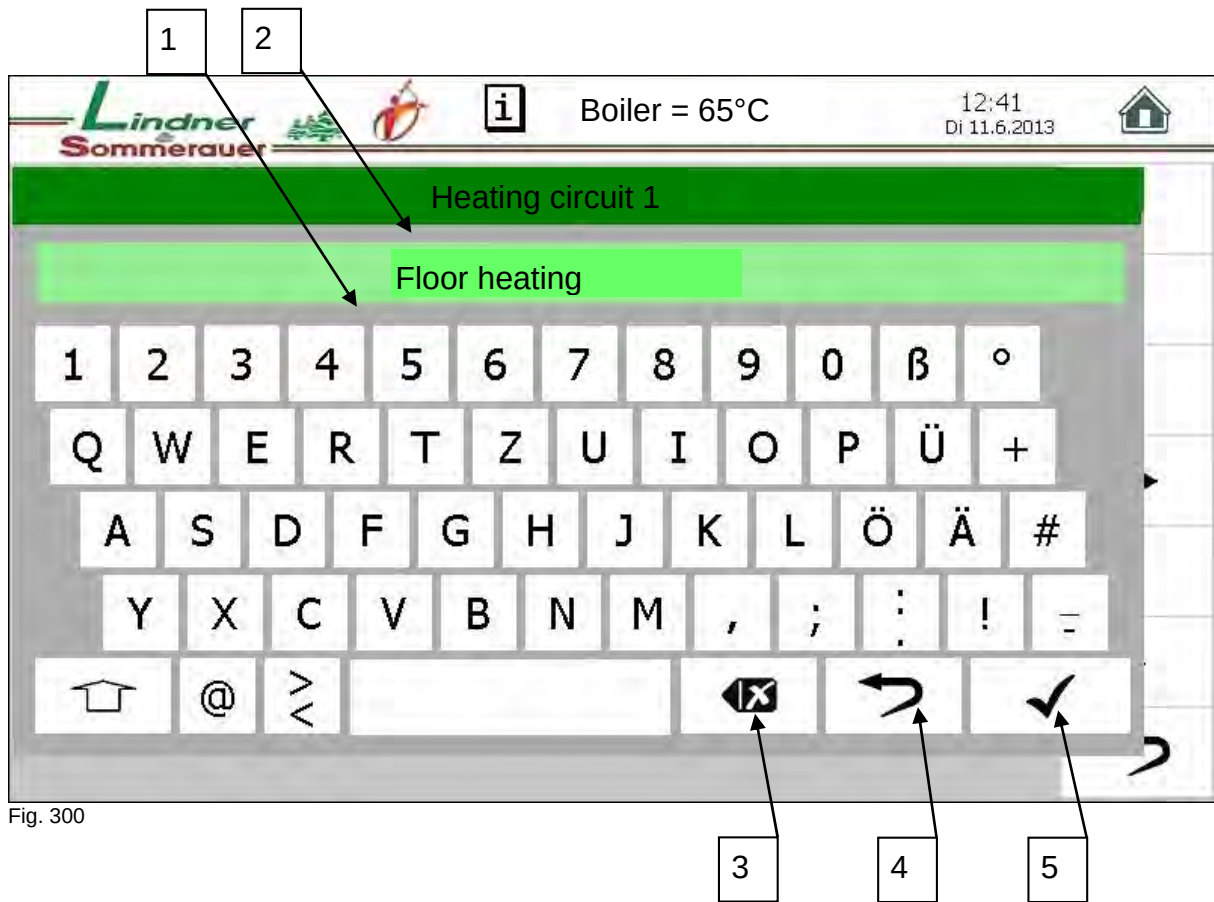


Fig. 300

Pushing the green button, e.g. "Heating circuit 1", opens a dialogue window. The selected parameter (2) is displayed in the upper, dark-green area; below it, there is the current designation of the parameter (1). Any name can be assigned via the keyboard. The checkmark (5) saves the entry, the cross (3) deletes individual numbers and the "back arrow" (4) closes the window without saving.

Overview

After the main switch is first activated, the display looks like figure 400.

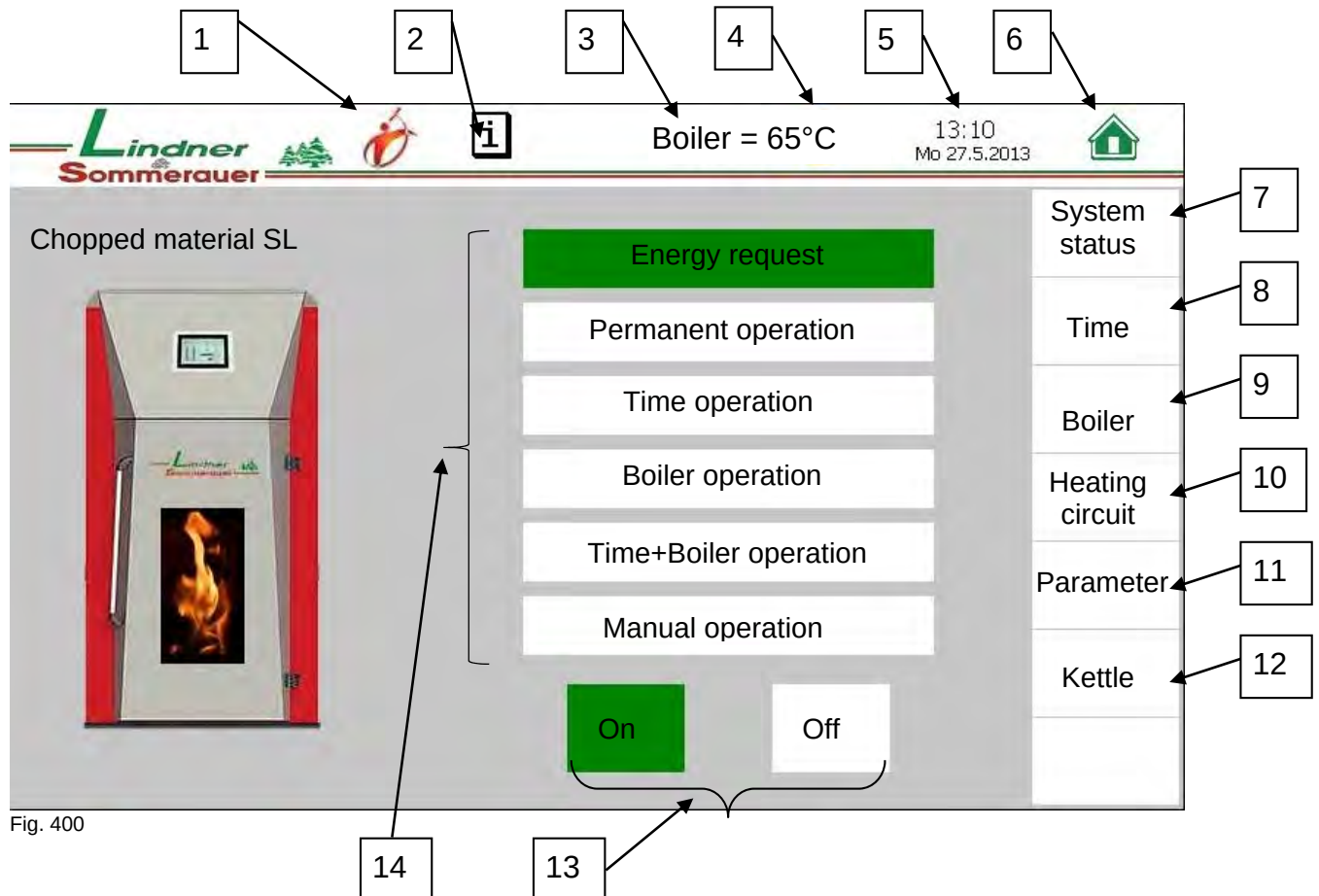


Fig. 400

Ad 1:

Cleaning mode: If this button is pushed, the screen will turn black for 30 seconds (figure 500) and the glass surface at the display can be cleaned without inadvertently changing any parameters. Once the countdown has expired, the display will work as before again.



Fig. 500

Ad 2:

Boiler info button: depending on operating mode of the boiler, the number and parameter type may deviate (Fig. 600).

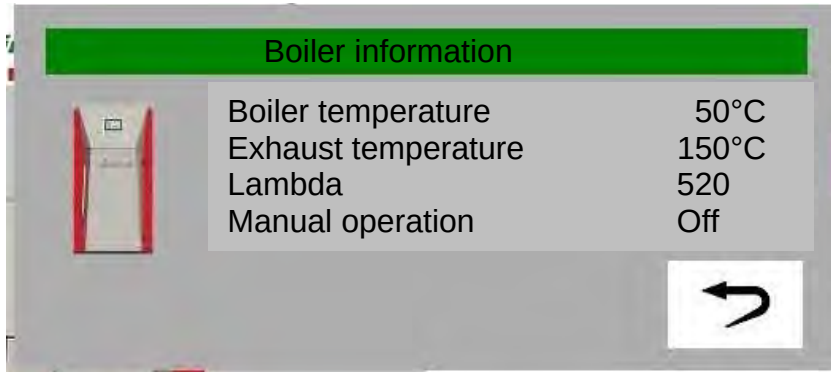


Fig. 600

Ad 3: Display of the current boiler temperature

Ad 4: Displays that the boiler is heating now (flame)

Ad 5: Date and time

Ad 6: Start page: When this button is pushed, the boiler will jump from any programme level to the starting page (Fig. 100)

Ad 7: System status: overview of all activated boilers and mixing circuits

Ad 8: Clock: Setting of the boiler runtimes in time mode

Ad 9: Boiler: The current boiler or buffer storage temperatures are displayed here and the different parameters can be adjusted individually.

Ad 10: Heating circuit: This displays the current lead temperature. The different parameters can be adjusted individually.

Ad 11: Parameter: Description to follow

Ad 12: Boiler: Specification of the boiler basic settings

Ad 13: Display of the operating condition "On/Off"

Ad 14: Display of the boiler's operating mode

System Status

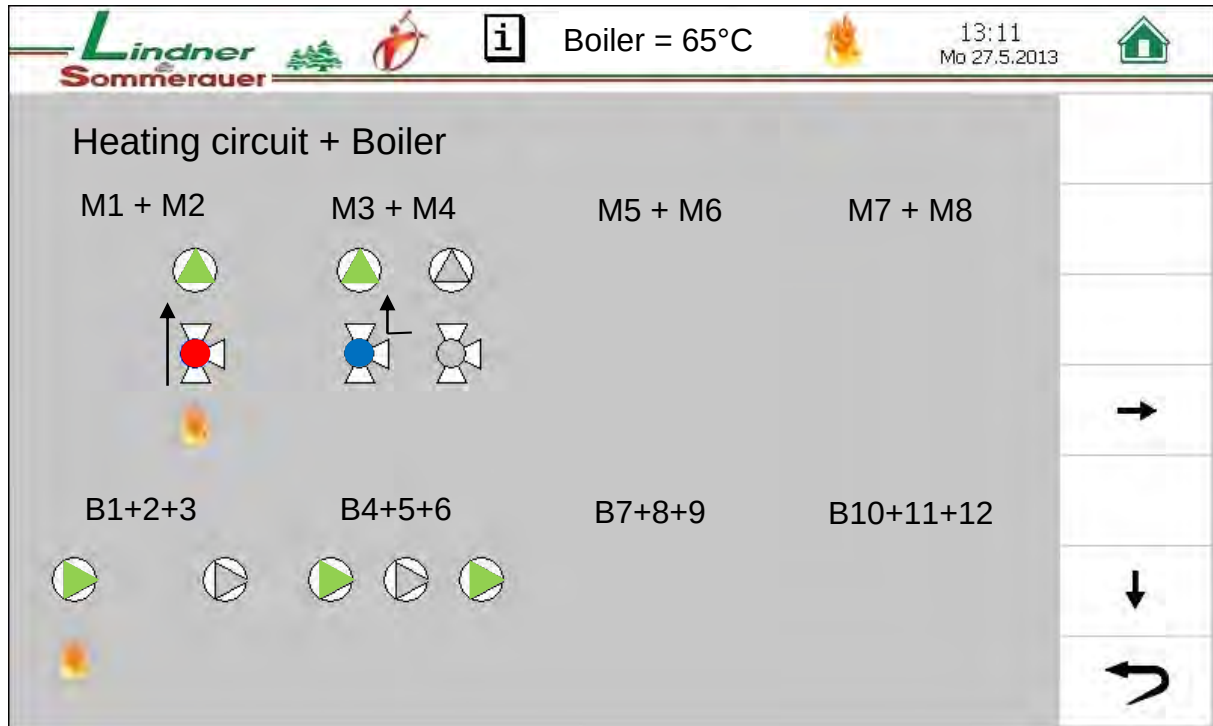


Fig. 700

The system status displays all pumps and heating circuit mixers activated in the control.

This includes:

- Heating circuit mixer M1 to M16
- Boiler B1 to B24
- Transfer mixer 1 to 4
- Return increase

The heating circuit mixers M9 to M16 and the boilers B13 to B24 can be accessed when pushing the arrow to the right.

If the triangle of the pump icon is grey, the pump is standing; if the triangle is green, the pump is running.

If the circle in the 3-directional heating circuit mixing valve is grey, the valve is standing. If the circle is red, more hot water is taken from the lead. If the circle is blue, more cold water is taken from the return line to achieve the required temperature.

The fire symbol in the heating circuit or boiler indicates that the heating circuit or boiler needs energy.

Pushing the "arrow down" will take you to the transfer, network mixers and the return increase (Fig. 800). If transfer, network mixers and storage charging pump (Fig.900) are not present, they are not displayed either.

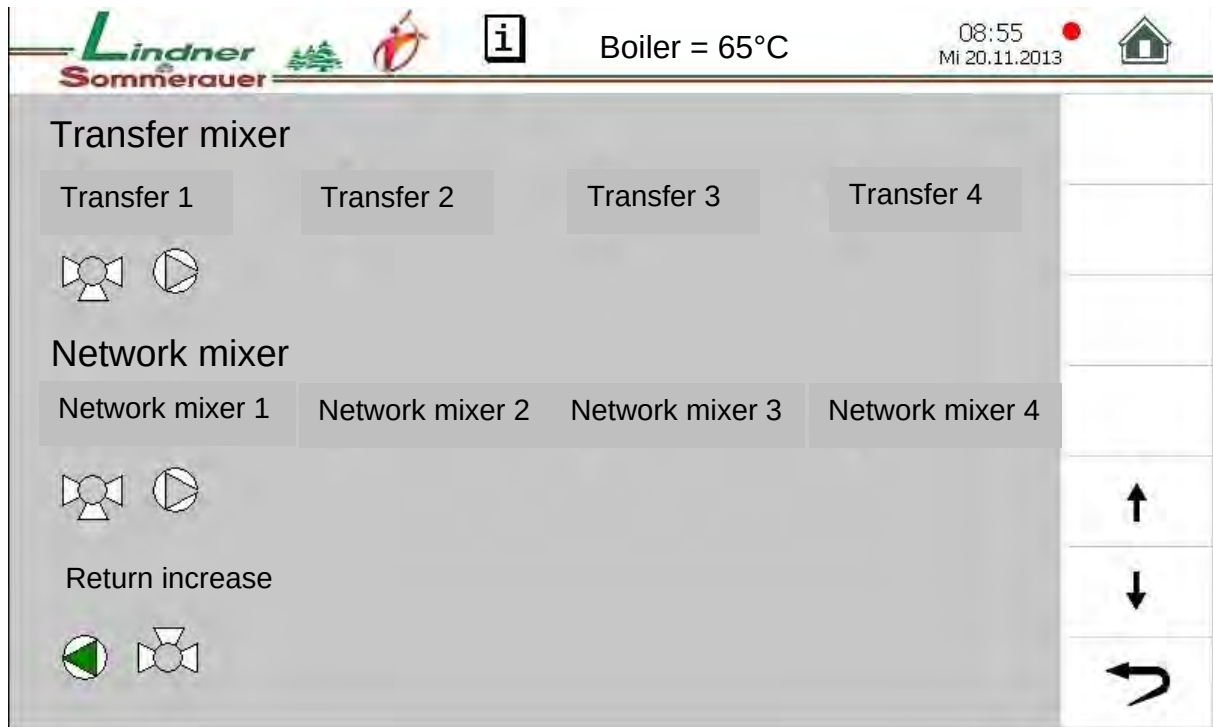


Fig. 800

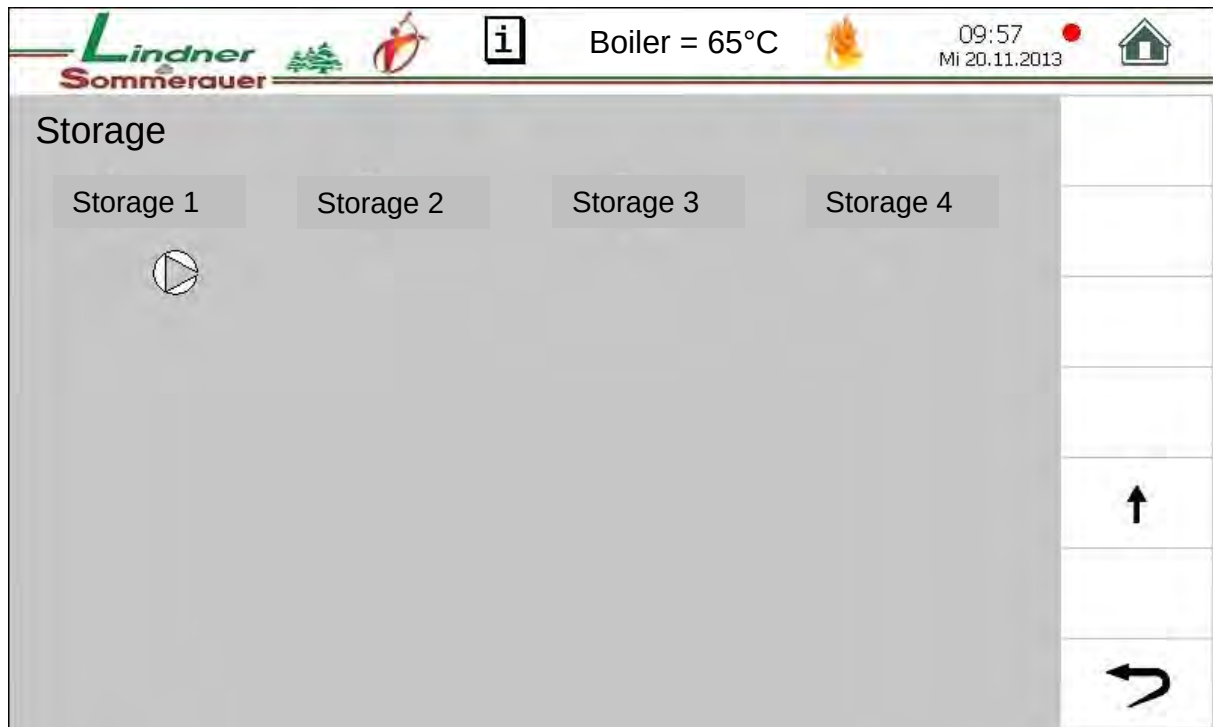


Fig. 900



Time

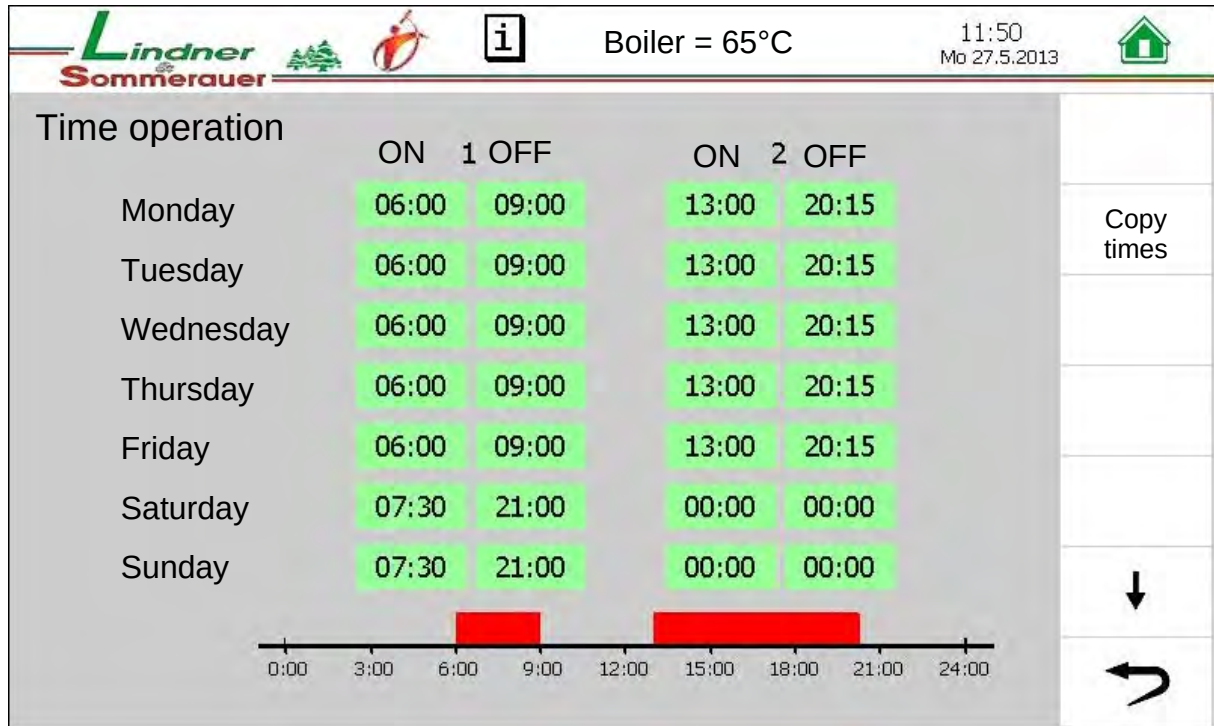


Fig. 1000

If the operating mode is set to time mode, two activation and deactivation points can be specified when pushing the button "Clock" (see Fig. 400 item 8) for each weekday.

Attention: The boiler starts at the specified "ON" time and stops at the specified "OFF" time. The boiler does not consider any energy requirements of the hot-water boiler or heating circuits. It will only run within the defined time.

In the lower area, the boiler runtime for the current day is displayed with red bars.

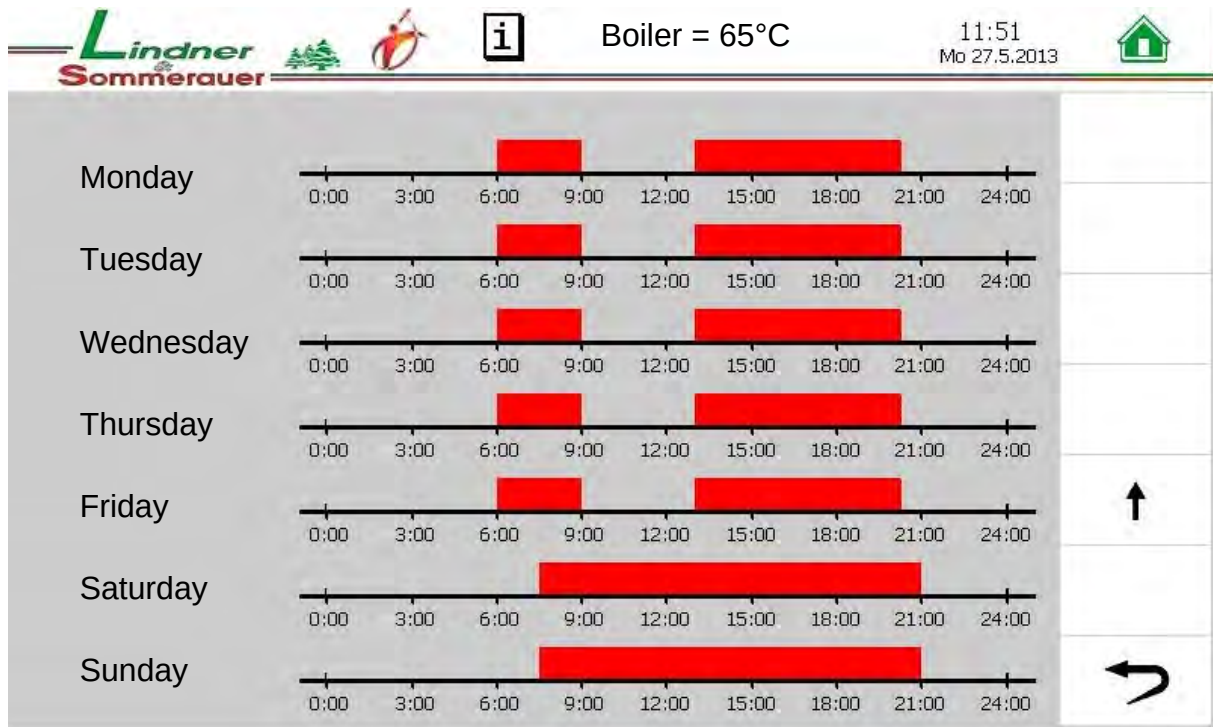


Fig. 1100

The second page shows a weekly overview of the respective heating times. They are displayed with a read beam.



Boiler

Storage (optionally only with storage module)

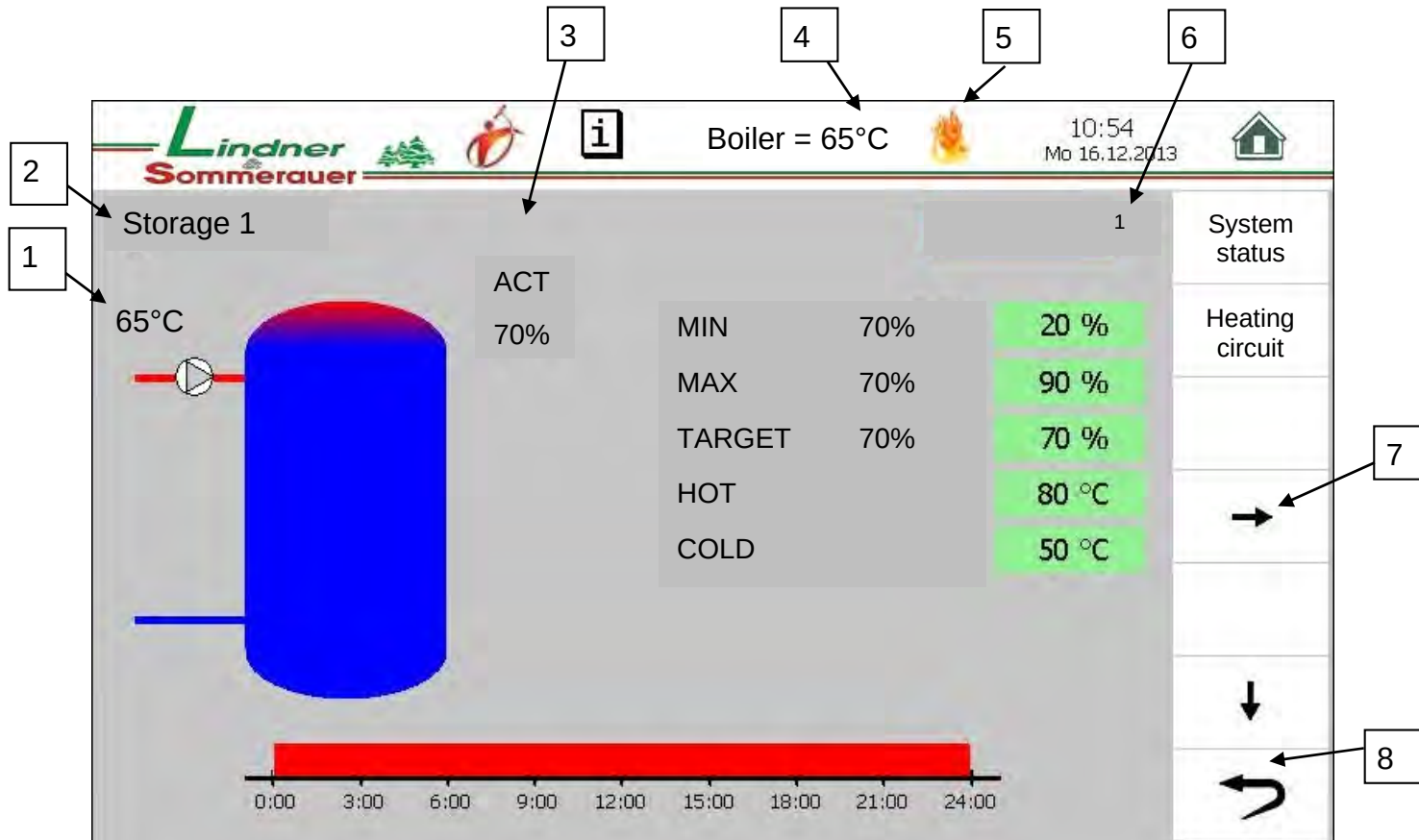


Fig. 1200

Ad 1: Display of the source temperature (boiler), charging pump does not run (grey icon)

Ad 2: Display of the storage name (see Parameters → Activate modules)

Ad 3: Display of the current storage charge conditions in percent

Ad 4: Display of the boiler temperature

Ad 5: Display that the boiler produces energy

Ad 6: Display that you are in storage 1

Ad 7: If several storages and/or boilers are present, this area shows the arrow buttons to switch to the next storage/boiler

Ad 8: Push the "back arrow" to move one level up in the menu

MIN: Minimum storage filling degree; at this charge condition at the latest, the boiler will run at the full output

MAX: Maximum storage filling degree; The heat production will stop at this charge condition.

TARGET: Intended charging condition

HOT: Upper limit to calculate the storage charging condition

COLD: Lower limit to calculate the storage charging condition.

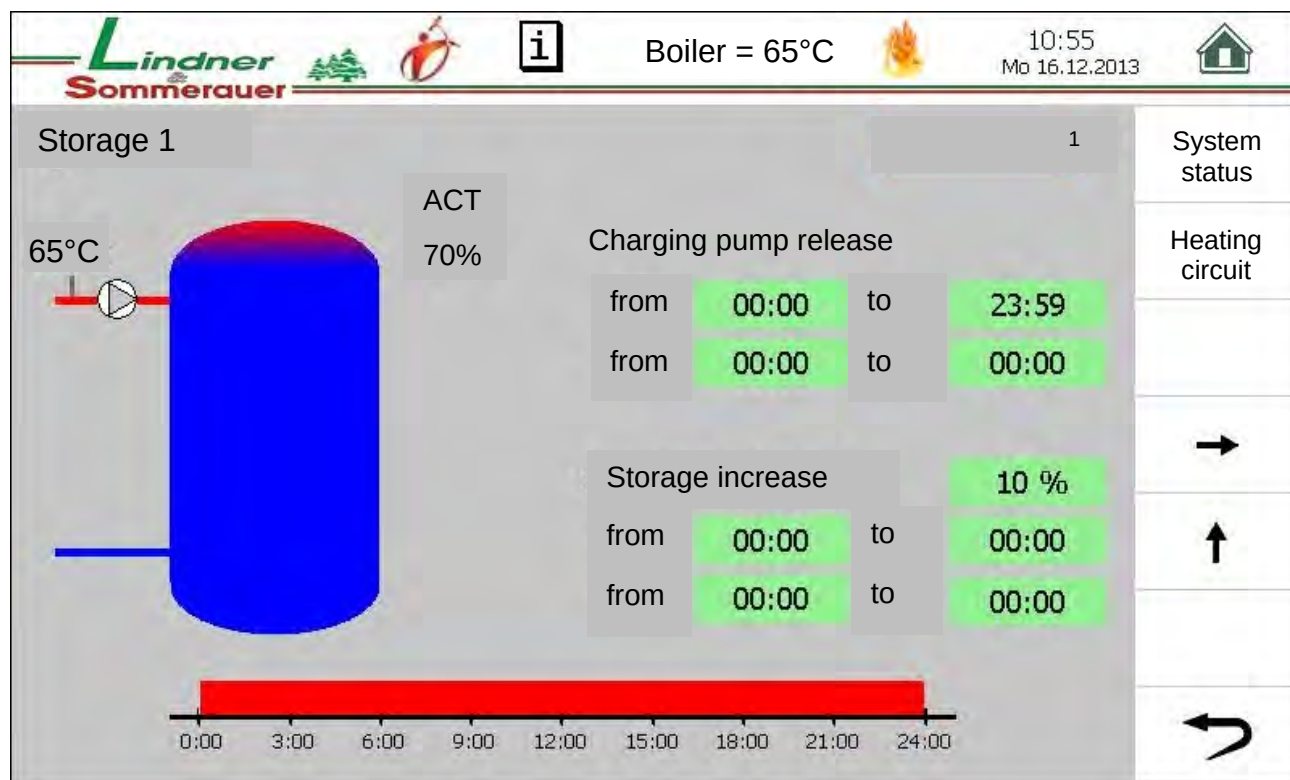


Fig. 1300

Charging pump release from/to: Two time windows in which the charging pump runs to charge the storage can be defined here.

Storage increase from/to: The storage charging condition can be increased, e.g., by 10% in two time windows here.



Boiler

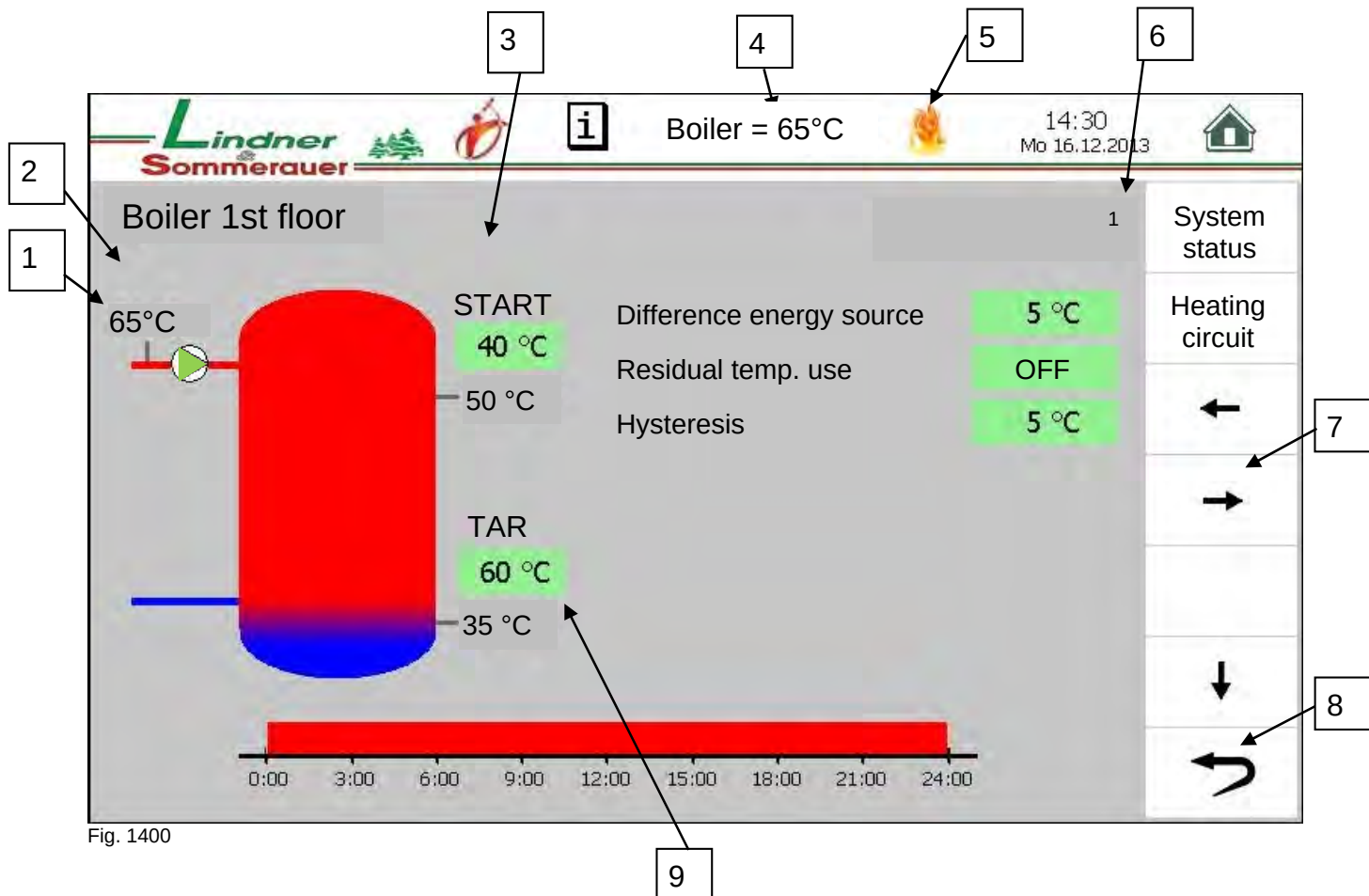


Fig. 1400

Ad 1: Display of the source temperature (boiler), loading pump is running (green icon)

Ad 2: If a firing symbol is to displayed, the boiler is requesting energy.

Ad 3: Display of the boiler starting temperature (green input field; at this temperature, the boiler charging starts) and the current boiler temperature

Ad 4: Display of the boiler temperature

Ad 5: Display that the boiler produces energy

Ad 6: Display that you are in boiler 1

Ad 7: The "arrow to the right" button takes you to the next boiler.

Ad 8: Push the "back arrow" to move one level up in the menu.

Ad 9: Display of the boiler target temperature (green input field; at this temperature, the boiler charging stops) and the current boiler temperature

Boiler 1st floor: The boiler designation can be customised in "Parameter" → "Activate modules".

Difference energy source: If the energy source is hotter than the energy requirement (boiler, buffer and/or storage) by, e.g., at least 5°C), charging takes place.

Residual temperature utilisation: When the boiler has reached its "target" temperature, the charging pump switches off. If the boiler still holds any energy, the residual energy can be charged into the boiler until the corresponding "temperature source difference" is reached. The lower of two boiler sensors is observed here.

Hysteresis: If the boiler, buffer and/or storage has reached its target temperature, the charging pump is stopped. If the temperature drops by the value defined in the hysteresis, the charging pump is started again. The hysteresis works in any operating mode.

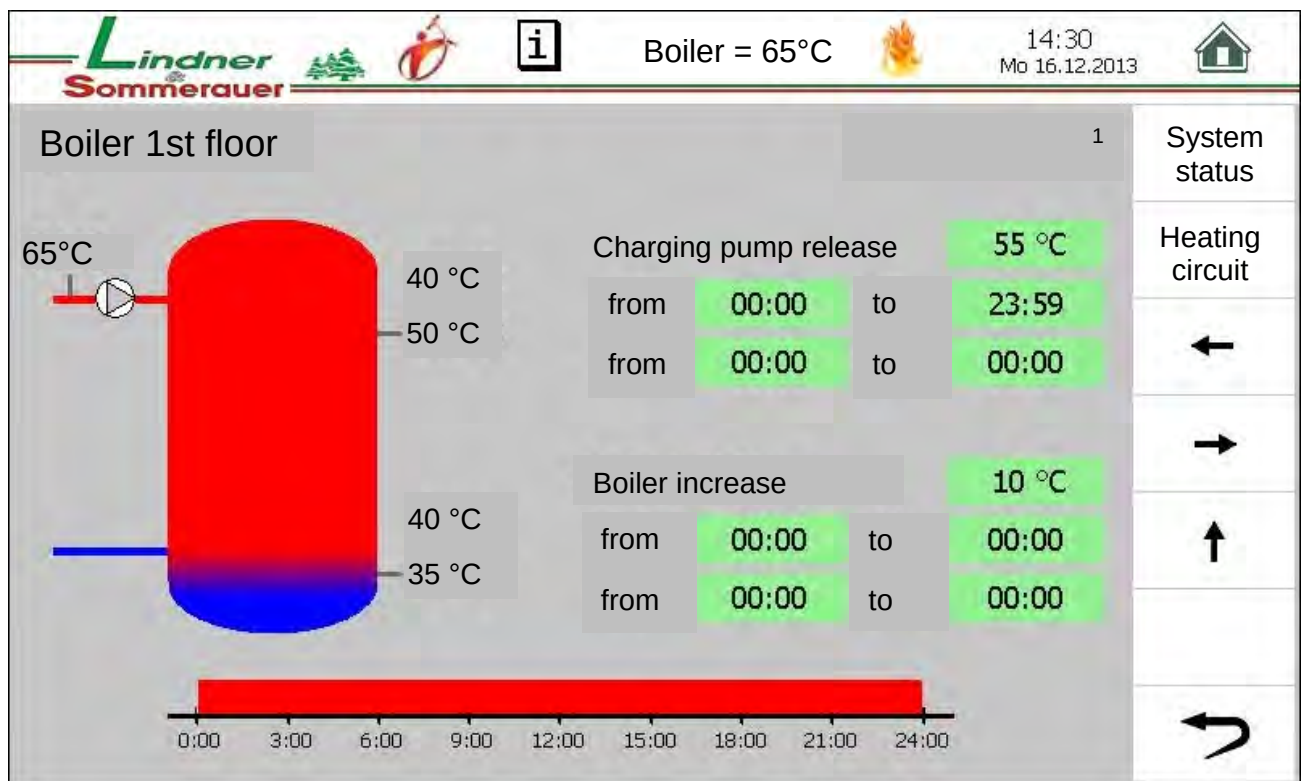


Fig. 1500

Charging pump release: When the energy source (boiler, storage or buffer) has reached this temperature, the charging pump starts up.

Charging pump release from/to: two time windows can be defined here in which the charging pump runs. If the deactivation time of the parameter "Charging pump release to" is reached during charging of the buffer storage or boiler, charging is discontinued.

This happens even if you have defined a boiler with two sensors (buffer storage). The charging pump switches off. This enables the boiler to shut down controlledly as well.

Raise boiler: The boiler/buffer temperature can be increased, e.g., by 10°C in two time windows here.



Heating circuit

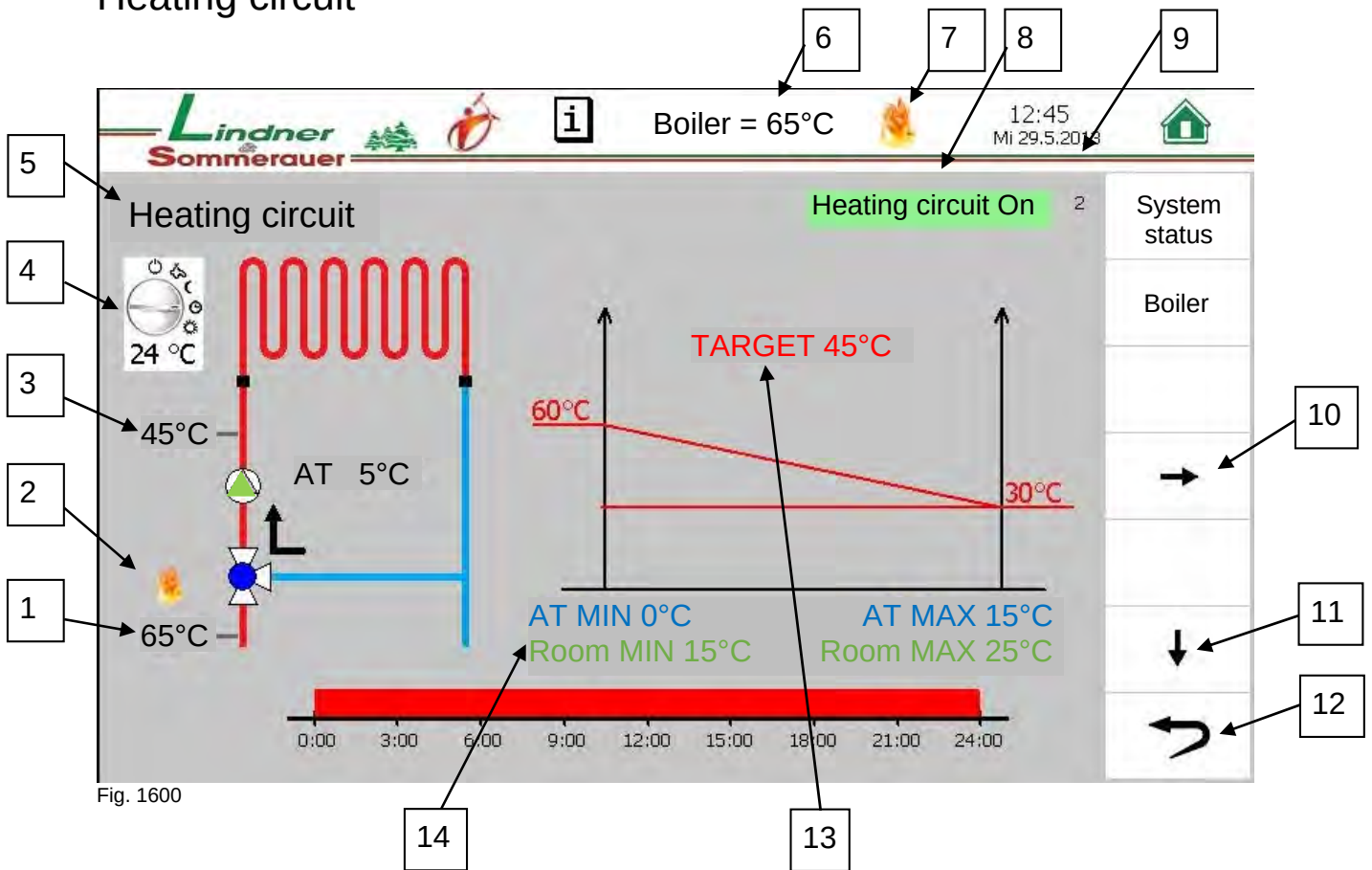


Fig. 1600

Ad 1: Display of the current source temperature

Ad 2: The heating circuit is currently requesting energy.

Ad 3: At the moment, the inlet has a temperature of 45°C.

Ad 4: The room unit displays the room temperature and, optionally, the switch position, if present.

Ad 5: The heating circuit can be designated individually (see "Parameter" → "Activate modules").

Ad 6: Display of the current boiler temperature.

Ad 7: Display that the boiler is producing energy.

Ad 8: The heating circuit is activated. Push the green button to open a window; the heating circuit can be switched off manually here. If the heating circuit is set to "Heating circuit off", it is no longer considered by the control until it is manually switched back to "Heating circuit on" again (Fig. 1700).

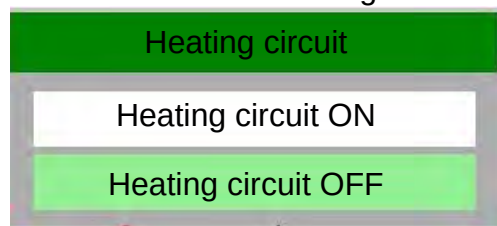


Fig. 1700

Ad 9: Display of the heating circuit number

Ad 10: The "arrow to the right" button takes you to the next heating circuit.

Ad 11: The "Arrow down button" takes you from the selected heating circuit to the next menu page.

Ad 12: Push the "back arrow" to move up one level in the menu.

Ad 13: The control calculates the lead temperature from the outer and room temperatures.

Ad 14: The required lead temperature is calculated from the values for the minimum and maximum outer temperature as well as the values for minimum and maximum room temperature.

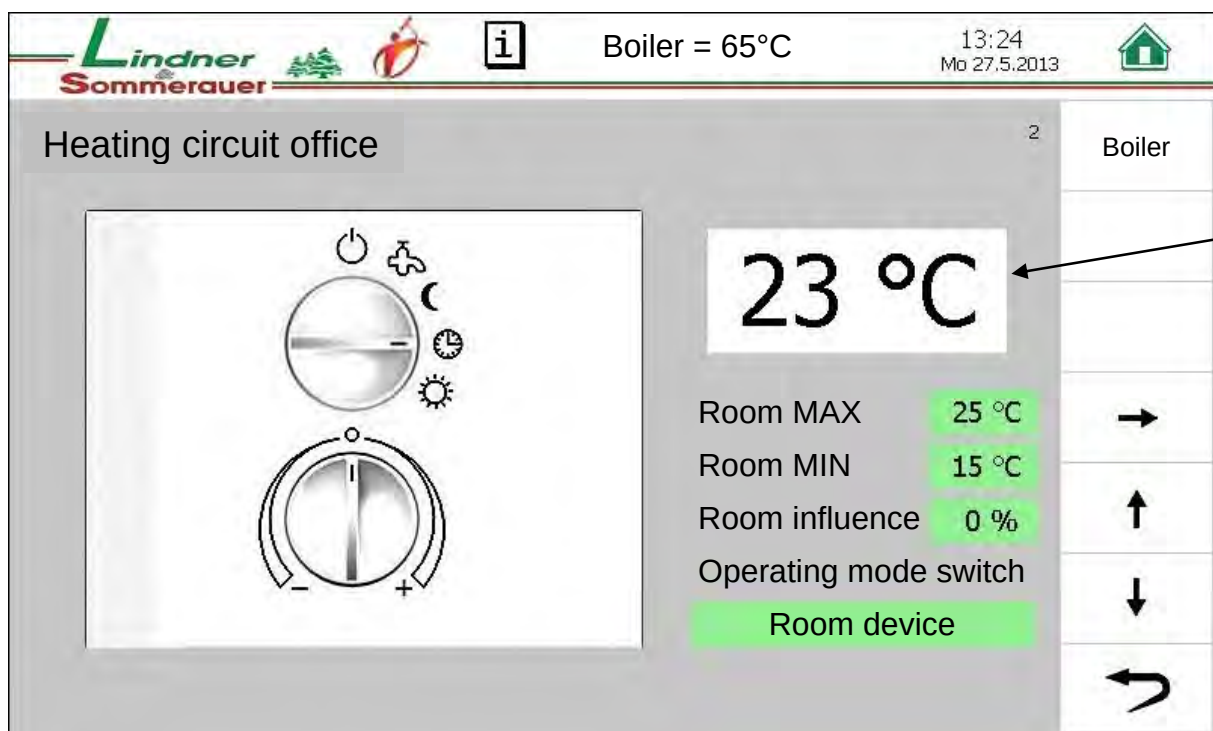


Fig. 1800

Ad 1: Display of the room temperature

Room MAX: Maximum room temperature; this parameter is required for calculation of the lead temperature (see Fig.1600)

Room MIN: Minimum room temperature; this parameter is required for calculation of the lead temperature (see Fig.1600).

Room influence: This parameter defines the scope at which the room temperature is included in calculation of the lead temperature (0% = no consideration of the room temperature; 100% = the lead temperature is only according to the room temperature).

Operating mode switch

Operation by room unit: The heating circuit is prepared only via the operating selection switch at the room unit. The functions differ depending on the position of the operating selection switch.

Operation by operating unit: The present room unit is not considered. The same operating modes as at the room unit can be selected at the operating unit (Fig. 1900, 1800).

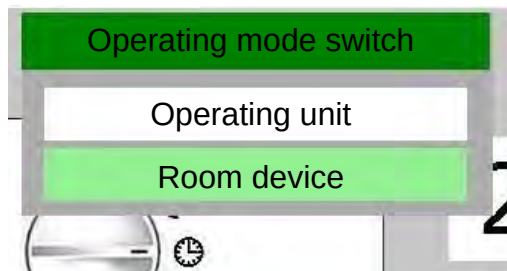


Fig. 1900

If the parameter "Operation by operating unit" is chosen, the wheel of the operating selection switch disappears at the illustration of the room unit. A green field with the same setting options as in the operating selection switch appears. Touch the field to make the desired settings.

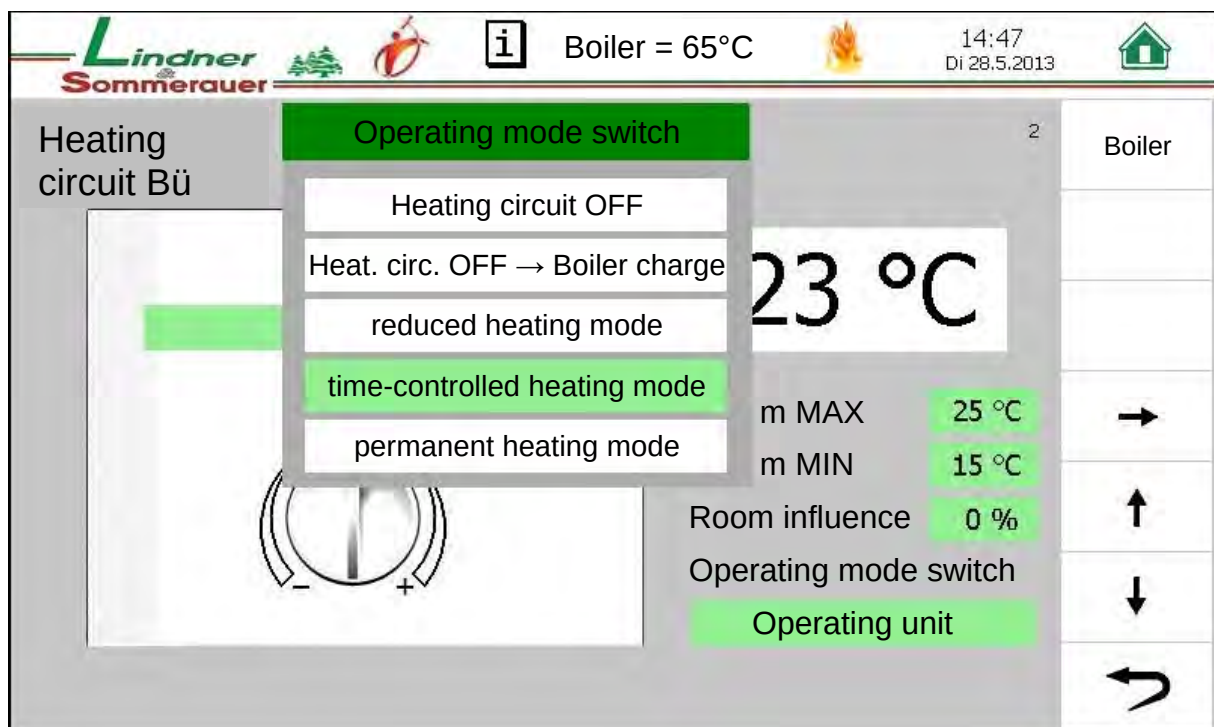


Fig. 2000

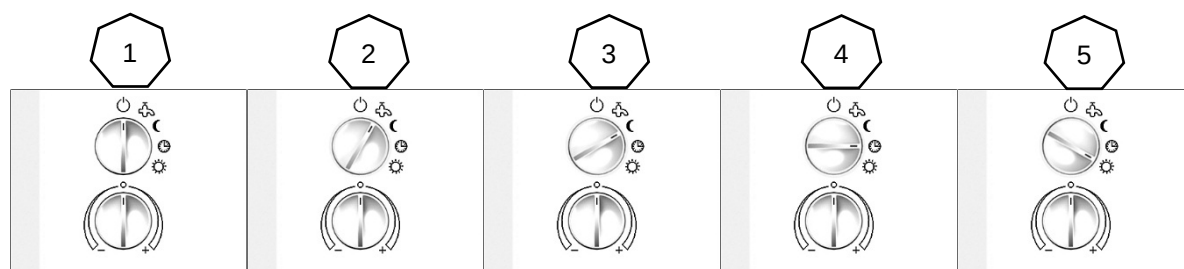


Fig. 2100

The following settings are possible at the mode selection switch of the room unit:

- **Heating circuit OFF** (1) → The heating circuit is switched off. If the mode selection switch is in this position, no hot water will be provided (boiler operation).
- **Heating circuit OFF – boiler charging** (hot-water operation) (2) → The heating circuit is off; only boiler charging takes place.
- **Reduced heating mode** (3) → The heating control reduces the calculated lead temperature by the value of the lead reduction.
- **Time-controlled heating mode** (4) → Heating and reduced operation take place as defined in Fig. 1800.
- **Permanent heating mode** (5) → Permanent heating takes place; the lead temperature is not reduced.

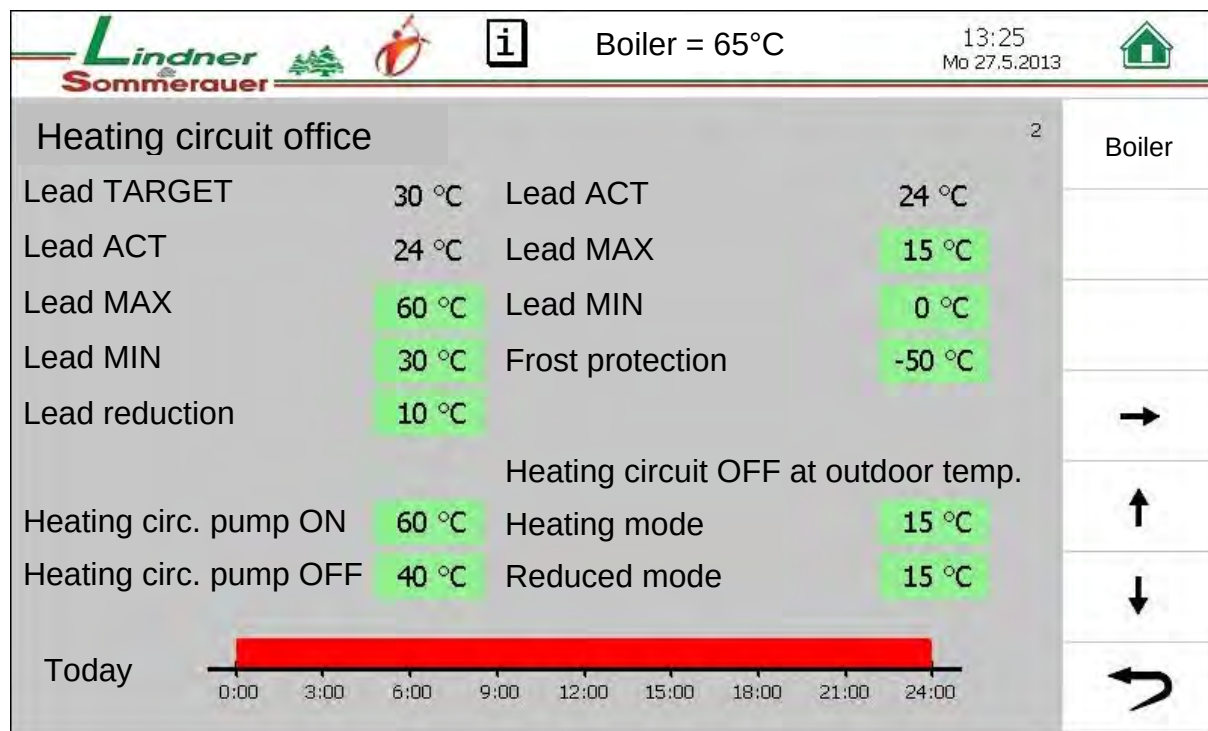


Fig. 2200

Lead TARG: The lead target temperature is reached depending on the maximum and minimum lead temperatures the maximum and minimum outer temperatures and the maximum and minimum room temperatures.

Lead ACT: Actual lead temperature

Lead MAX: The highest lead temperature is specified for the control here.

Lead MIN: The lowest lead temperature is specified for the control here.

Lead reduction: If the control is outside of the heating times (Fig. 2200), the lead target temperature is reduced by the lead reduction value.

Heating circuit pump ON: When the corresponding energy source temperature is reached, the heating circuit pump switches on.

Heating circuit pump OFF: When the corresponding energy source temperature is reached, the heating circuit pump switches off.

Outer temperature ACT: Displays the actual outer temperature.

Outer temperature MAX: The control requires a maximum outer temperature to calculate the lead target temperature.

Outer temperature MIN: The control requires a minimum outer temperature to calculate the lead target temperature.

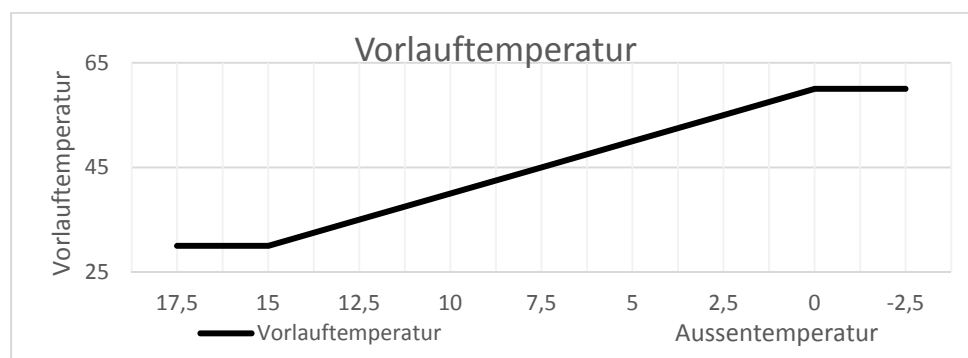
Frost prot.: If the temperature defined in the control is undercut, all heating circuit and boiler pumps start running to prevent possible frost damage.

Heating circuit off at outdoor temperature

Heating mode: If the defined temperature is reached or exceeded, the heating circuit pump switches off; heating is interrupted until the temperature is undercut.

Reduced mode: During the time of heating at reduced lead target temperature, a temperature can be defined according to heating.

Today: The red and blue bars illustrate when heating or reduced heating take place today.



Tab. 100

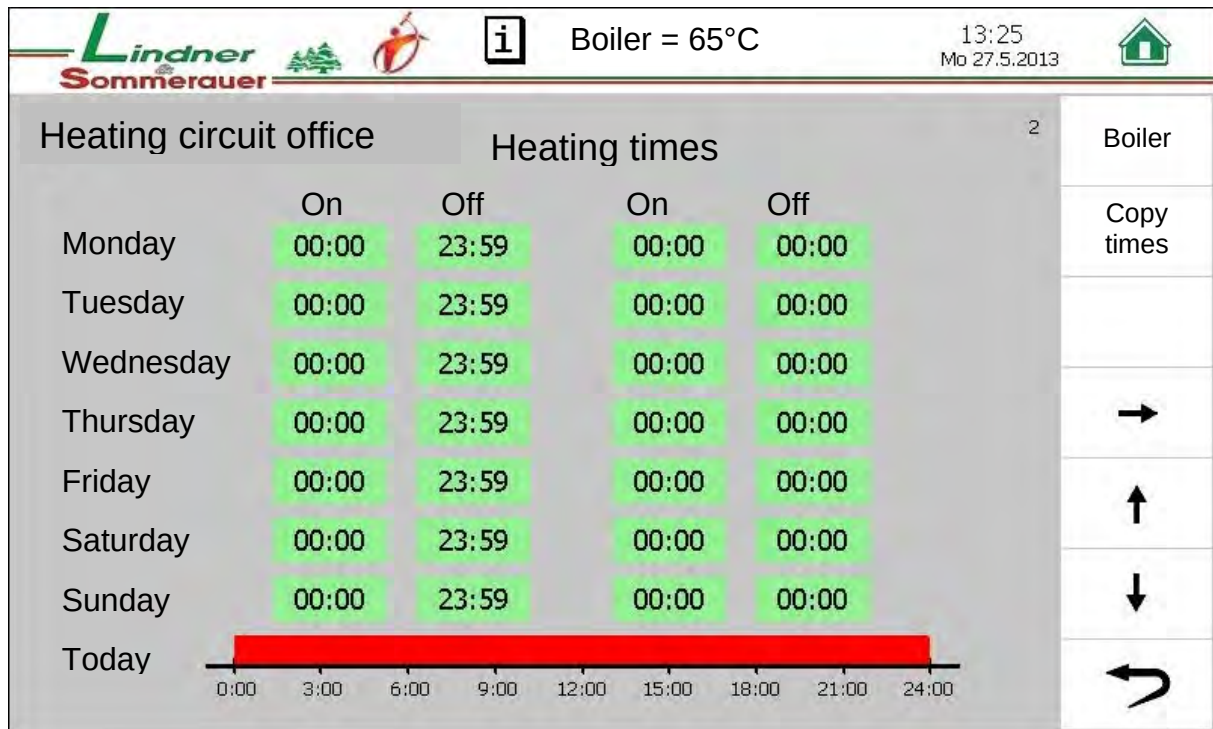


Fig. 2300

Two different heating times can be defined per weekday; heating is reduced outside of these times.

In the factory settings, the heating time is defined from 00:00 AM to 11:59 PM, i.e. heating takes place from midnight to 11:59 AM; the factory settings do not have any reduced heating operation predefined.

Pushing the green input fields will open a window where the heating time "On" and "Off" can be specified. When the input has been made, the "checkmark" can be used to confirm the input. The value is accepted. If you have made a typo, you can delete the figure with the "cross". Push the "checkmark" or the "back arrow" to return to the original value.

When the heating times are customised, they can be copied to every single day with the command "Copy times".

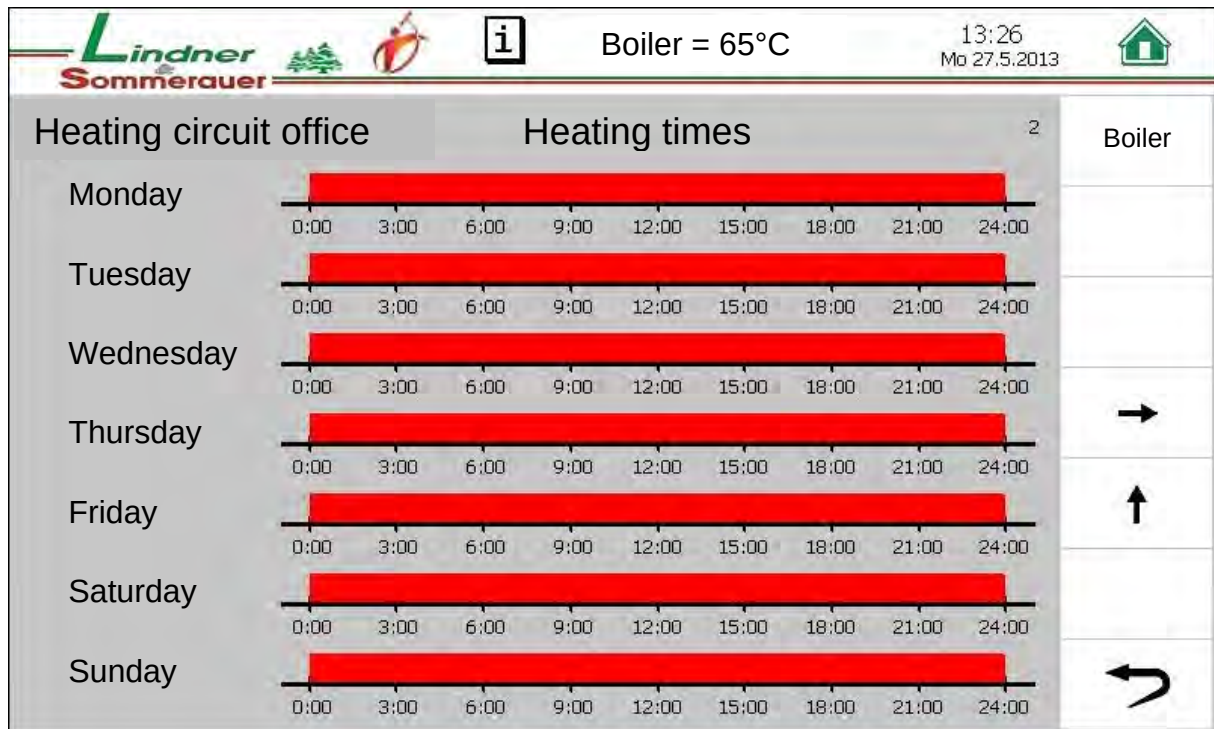


Fig. 2400

Parameter

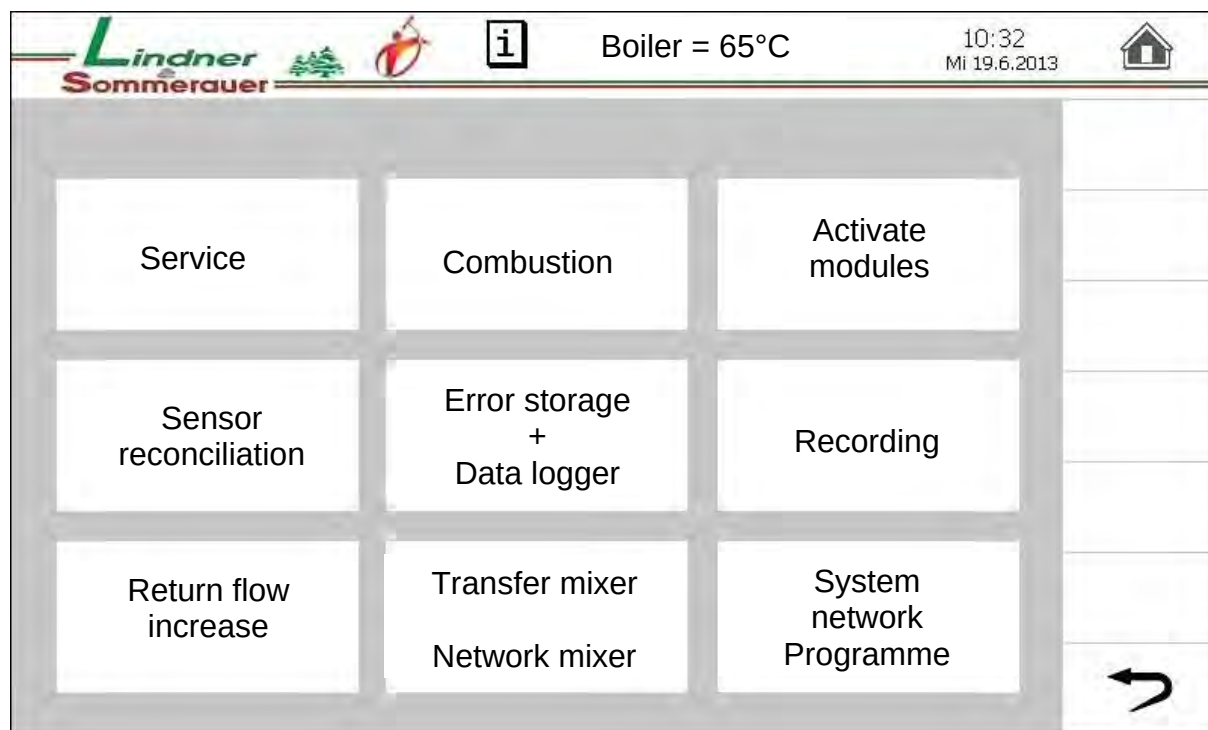
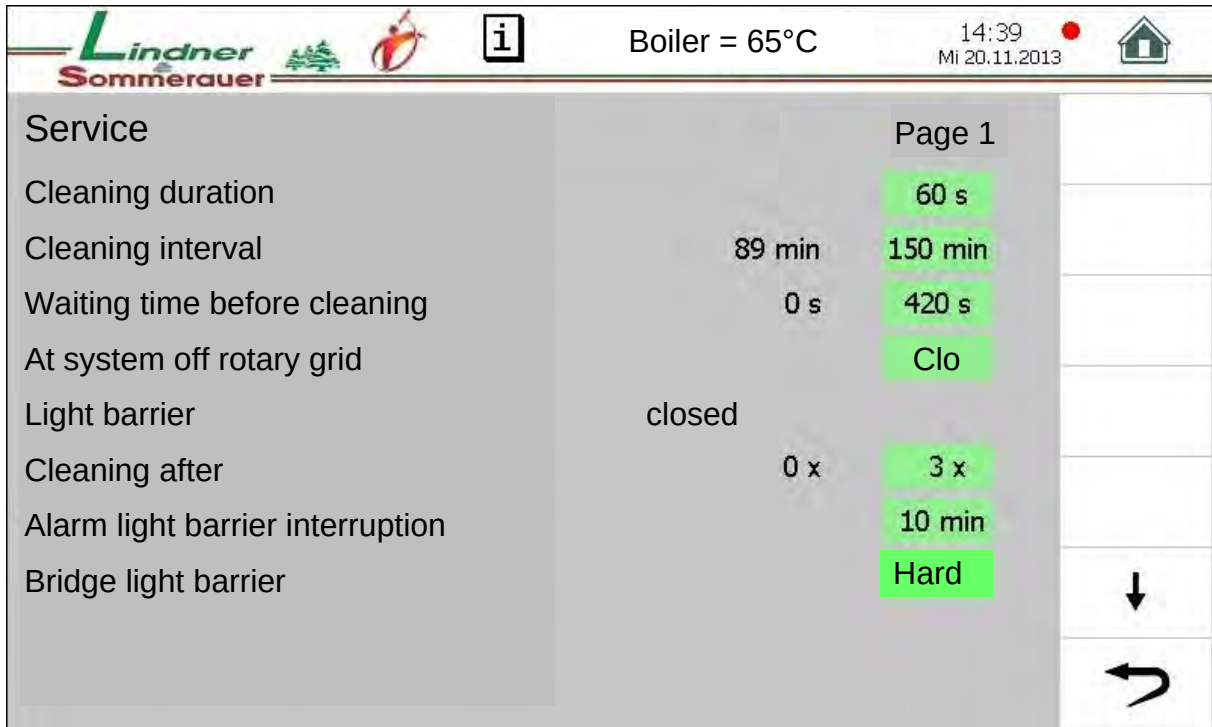


Fig. 2500

Pushing "Parameter" will take you from the start page to this one.

Service



Service		Page 1
Cleaning duration		60 s
Cleaning interval	89 min	150 min
Waiting time before cleaning	0 s	420 s
At system off rotary grid		Clo
Light barrier	closed	
Cleaning after	0 x	3 x
Alarm light barrier interruption		10 min
Bridge light barrier		Hard

Fig. 2600

Cleaning duration: When automatic cleaning is activated, it will take 60 seconds.

Cleaning interval: Automatic cleaning is performed after a stoker runtime of 150 min. If the remaining stoker time at system start-up is ≤ 60 min, a cleaning is performed before the start.

The cleaning intervals are dynamically controlled depending on the output range (rated load, partial load).

If the system is operated at a boiler output of 30% to 52%, each stoker runtime is multiplied by the factor 3.

If the system is operated at a boiler output of 53% to 75%, each stoker runtime is multiplied by the factor 2.

If the system is operated at a boiler output of 76% to 100%, each stoker runtime is multiplied by the factor 1.

I.e. if the system is only operated with an output specification of, e.g., 40%, the cleaning interval in the example named is 40min.

If the system is only operated with an output specification of, e.g., 80%, the cleaning interval in the example named is 120min. If the system adjusts modulating, any time between 40 min and 120 min may result from the calculations in this example.

Waiting time before cleaning: A waiting time of this length follows after cleaning release is reached to burn the heating material still in the burner as completely as possible. Cleaning takes place after this! The parameter "Fan stop suction draft V1 at exhaust temperature" must be undercut as well.

At system off-rotary grid: "Closed" or "Open"; after the defined ignition temperature is undercut, the rotary grid moves to "open". This prevents pulling of wrong air through the stoker duct and thus backburn at system "off"

Light barrier: Displays whether the light barrier is closed (free) or interrupted. If the light barrier is interrupted, seconds are counted up until the time of parameter "Alarm light barrier interruption" is reached.

Cleaning after: If the light barrier is interrupted for at least 20 seconds, the counter counts up. After three interruptions (factory settings), cleaning is performed. One entry is deleted every 60 seconds.

Alarm light barrier interruption: If the light barrier is interrupted for longer than the defined parameter, an error message is put out.

Bridge light barrier: currently without function.

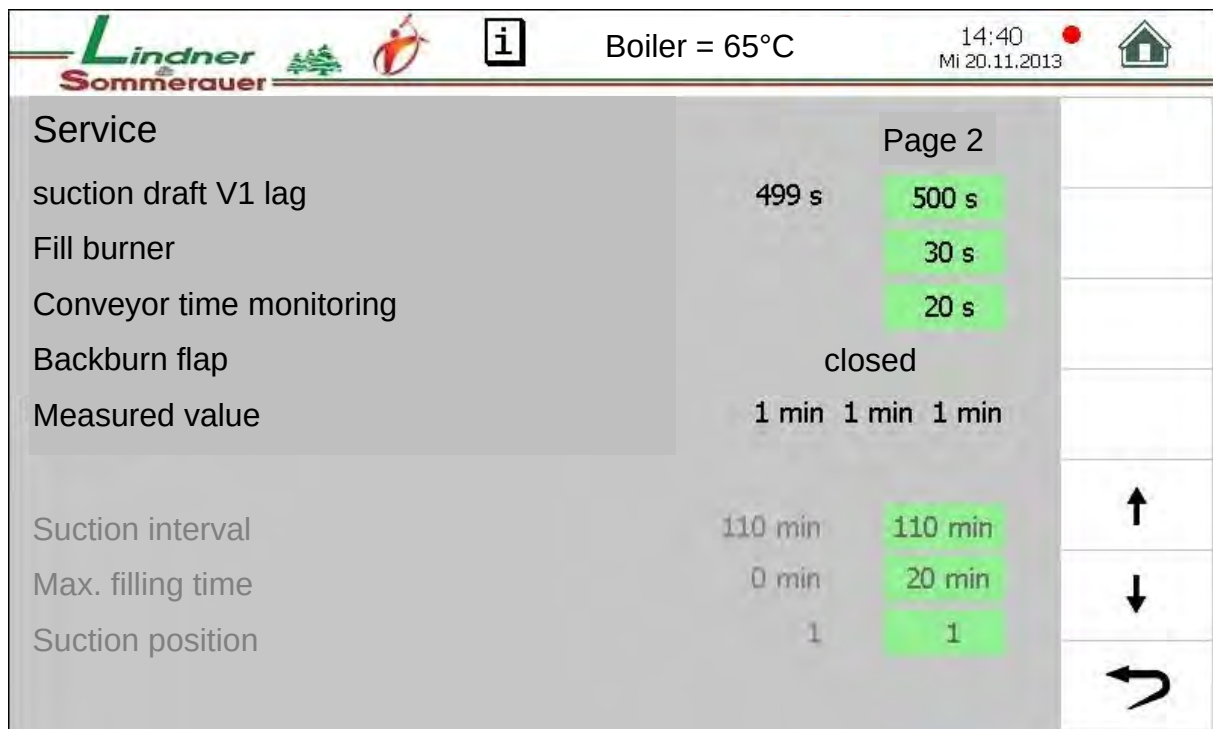


Fig. 2700

Suction draft V1 lag: If the system is given an off command, the V1 (suction draft) will lag for the intended time.

Fill burner: Adjustable time window at which all discharge motors and the stoker screw are running when the backburn flap is open.

Conveyor time monitoring: The last three stoker runtimes at the heating system are stopped until the chamber discharge starts. If the current value exceeds the average of the last three values by a certain factor, the backburn flap is closed and opened again. Then a material infeed of, e.g., 20 seconds takes place.

Backburn flap: Display of whether the backburn flap is open or closed.

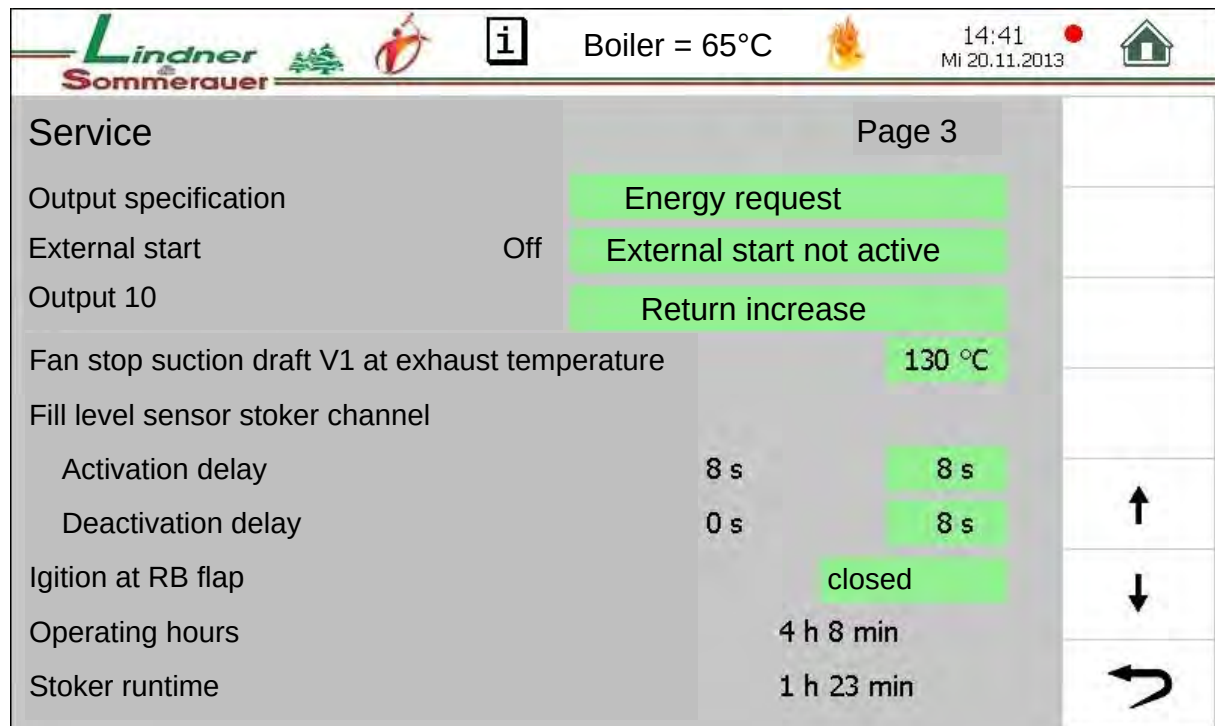
Measured value: The three last stoker runtimes until activation of the chamber discharge are logged.

Optional, only for SL-P 30 to SL-P 150

Suction interval: After the defined stoker runtime of, e.g., 110 min, the pellet storage container is filled.

Max. filling time: If the storage container is not filled yet after this filling time, switching to the next suction probe takes place.

Suction position: Here, you can choose from which suction position the storage container is filled.



Service		Page 3
Output specification	Energy request	
External start	Off	External start not active
Output 10		Return increase
Fan stop suction draft V1 at exhaust temperature		130 °C
Fill level sensor stoker channel		
Activation delay	8 s	8 s
Deactivation delay	0 s	8 s
Ignition at RB flap		closed
Operating hours		4 h 8 min
Stoker runtime		1 h 23 min

Fig. 2800

Output specification: Five different specifications permit definition of when and how the boiler will start (see specifications of output; Fig. 2900).

External start: Two different specifications permit defining whether the boiler starts or stops (see external start).

Output 10: A programmable output (see output 10).

Fan stop suction draft V1 at exhaust temperature: Before planned cleaning, the fan V1 must undercut the specified value so that fan V1 switches off and cleaning is performed.

Fill level sensor interference channel

Activation delay: If the fill level sensor at the stoker channel continually reports empty for, e.g., 8 seconds, chamber discharge commences.

Deactivation delay: If the fill level sensor at the stoker channel continually reports full for, e.g., 8 seconds, chamber discharge stops.

Ignition at RB flap: Currently without function.

Operating hours: Display of the current operating hours.

Stoker runtime: Display of the current stoker runtime (is needed, e.g., for multiple boiler control)

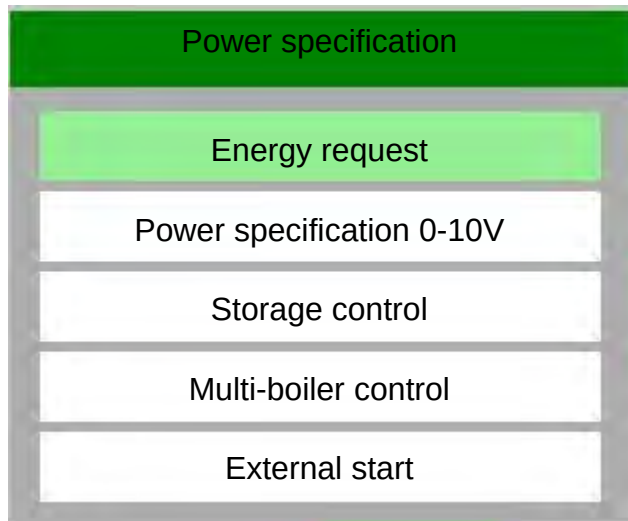


Fig. 2900

Energy request: The boiler checks whether a heating circuit or buffer/boiler requests energy. If this is the case, start takes place automatically.

Power specification 0-10V: If heat distribution takes place by external control, the boiler's heat output can be specified by this external control via a 0-10V voltage. (10V=100% heat output, 3V=30% heat output, <3V=boiler off)

Storage regulation: The required heating output is specified via the storage (only possible with a storage module).

Multiple boiler control: The boiler sequence circuit and output specification are provided by multiple boiler control of SL-Technik GmbH.

External start: If the contact at the power unit (main PCB, slot 16) is closed by an external control, the boiler will start.

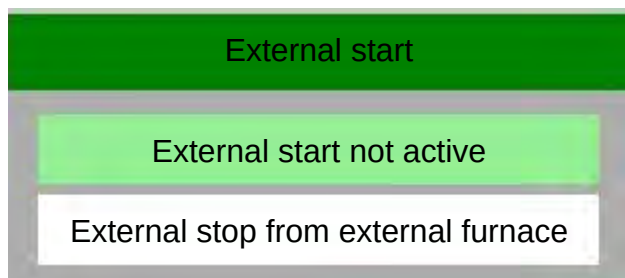


Fig. 3000

External start not active: If the contact at the power unit (main PCB, slot 16) is closed by an external control, the boiler will stop.

External stop from ext. furnace: If this version is active, a thermostat will recognise whether the second furnace is heating. If the second furnace is in operation, our furnace will switch off and only assume the heat distribution.

OFF:::"Secondary furnace" cold → our boiler starts

ON:::"Secondary furnace" hot → our boiler stops.

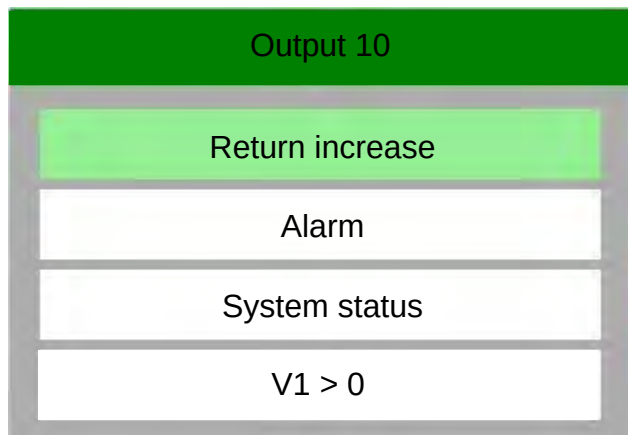


Fig. 3100

Return increase: A return increase pump can be connected to the output 10 of the power unit (main PCB).

Alarm: An optical or acoustic signal encoder with 230 V can be connected to output 10 of the power unit (main PCB).

System status: The "System status" can be requested at output 10 of the power unit (main PCB) (system on or off).

V1 > 0: At output 10 of the power unit (main PCB), an additional device that will only run when the suction draft fan V1 is running at a speed of >0% can be operated.

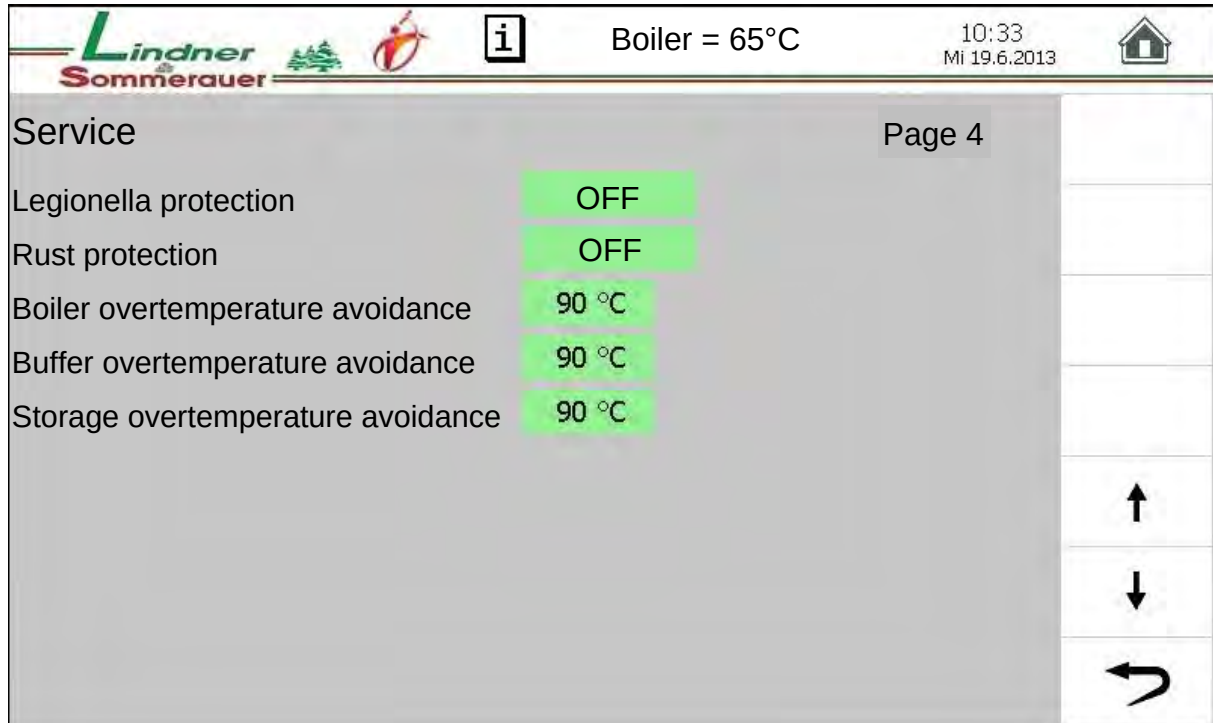


Fig. 3200

Legionella protection: To avoid germ formation, a weekday on which the boiler is heated to >70°C once can be defined. If the boiler does not need any energy on that day, it also is not charged and legionella protection is not performed.

Rust protection: If rust protection is activated on a specific day, it will always start at noon on that day. The charging pumps are activated for one minute and the heating circuit mixers are given an Open signal for five minutes and a Closed signal for six minutes. The Runtime of the heating circuit mixer is considered.

Boiler overtemperature avoidance: When the defined temperature is reached, all pumps directly supplied by the boiler are activated:

- Boiler pumps
- Buffer storage pumps
- Heating circuit pumps right at the boiler
- Storage pumps
- Return pump
- Transfer pump (network pump not affected)

Buffer overtemperature avoidance: When the defined temperature is reached, all pumps directly supplied by the buffer are activated:

- Boiler pumps at the buffer storage
- Heating circuit pumps right at the buffer storage
- Transfer pump

Storage overtemperature avoidance: When the defined temperature is reached, all pumps directly supplied by the storage are activated:

- Boiler pumps
- Buffer storage pumps
- Heating circuit pumps of the storage
- Transfer pump (network pump not affected)

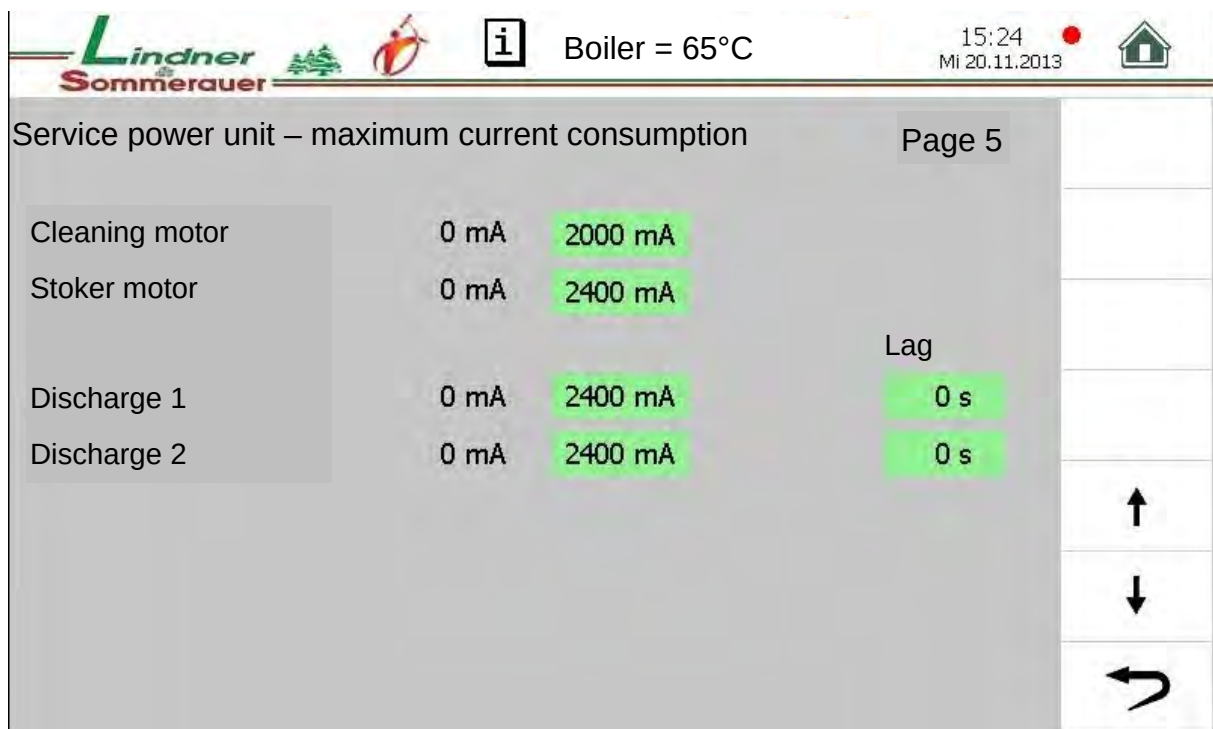


Fig. 3300

The current limits can be adjusted for the different drive motors connected to the power unit (main PCB).

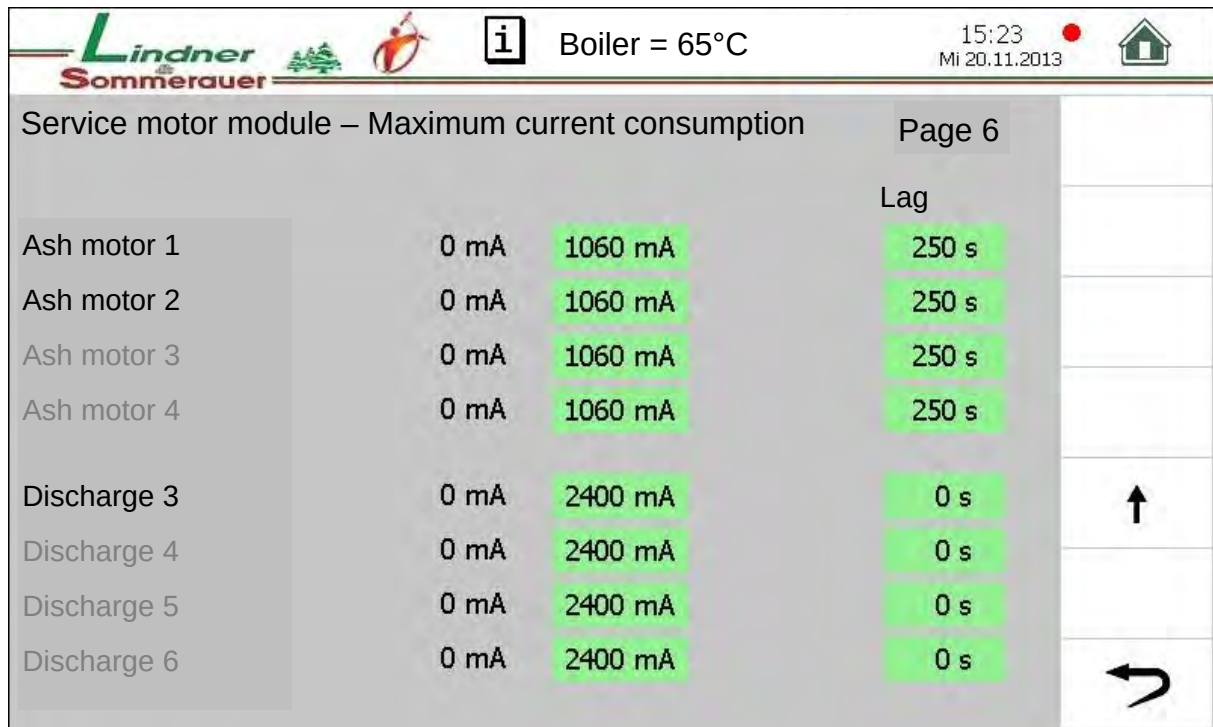


Fig. 3400

The current limits can be adjusted to the different drive motors connected to the motor module.

Combustion

In our boilers' control, the material infeed is predefined in seconds per minute for material infeed at rated load (largest output 100%). It is then calculated automatically across the entire output range. Furthermore, the parameters must be defined at rated, partial load and ignition for suction draft V1 and subsequent combustion V2. When the boiler has reached the specified boiler target temperature, it starts reducing output until it has reached the target parameter partial load. The targets between rated and partial load are calculated automatically as in the chart. If different fuel qualities make it impossible to reach the control parameters (Lambda, exhaust/combustion chamber temperature, vacuum) with the targets, the control can automatically adjust the target control range with plus/minus.

The following parameters control the following control parameters:

Suction draft V1	→ Vacuum (excluding series SL-T 6R)
Afterburning V2	→ Lambda value
Conveyor time	→ Lambda value
Break time	→ Exhaust temperature or combustion chamber
temperature	

    Boiler = 65°C						14:59 Do 21.11.2013	
Combustion						Page 1	Boiler
	TARGET	ACT	nom. load	part. load	ignition		Service
Boilerl output	100%	100%					
Material insert	30s/min	30s/min	30 s/min	9 s/min	9 s/min		
Current conveyor time		1,8s					
Current braek time		1,8s					
Suction draft V1	90%	90%	90 %	25 %	90 %		
Afterburning V2	20%	20%	20 %	5 %	5 %		
Exhaust temperature		198°C	230 °C	140 °C			↓
Lambda		553	550	520			↶

Fig. 3500

Boiler output: Display of the target or actual boiler output. The boiler adjusts the actual boiler output to the target boiler output via the parameter "adjustment speed".

Material insert: The material infeed is predefined in coordination with the rated output of the boiler.

Current supply time, current break time: (the displayed value serves information purposes only; it cannot be edited) Is adjusted automatically at all times according to the current target boiler output

Suction draft V1: Freely definable parameters for rated, partial load and ignition; the current target and actual speeds are also displayed in percent.

Afterburning V2: Freely definable parameters for rated, partial load and ignition; the current target and actual speeds are also displayed in percent.

Exhaust temperature: Freely definable parameters for rated and partial load, as well as display of the current exhaust temperature.

Lambda: Freely definable parameters for rated and partial load, as well as display of the current lambda value.

Afterburning V2	5 %	5 %	20 %	5 %	5 %	
Combustion chamber temp.	499 °C	230 °C	140 °C			↓
Lambda	836	550	520			
Vacuum	☒	0,45 mBar	0,20 mBar	0,60 mBar		↶

Fig. 3500.1

Combustion chamber temperature: If a function module is activated at the system (see Parameter → Activate modules), the combustion chamber temperature is monitored instead of the exhaust temperature.

Vacuum: For safety-technical reasons, the vacuum in the combustion chamber of our systems with >150kW rated heat output is monitored. The parameters with a green background are predefined and can be changed within a specific bandwidth. There may be various reasons for some systems having a function module installed to monitor, e.g., the combustion chamber temperature. For this reason, it is possible to remove the checkmark for vacuum. The vacuum monitoring can be deactivated after input of the required password. (see Fig. 3600)

Vacuum safety deactivation

Safety deactivation Off

Safety deactivation On

Fig. 3600

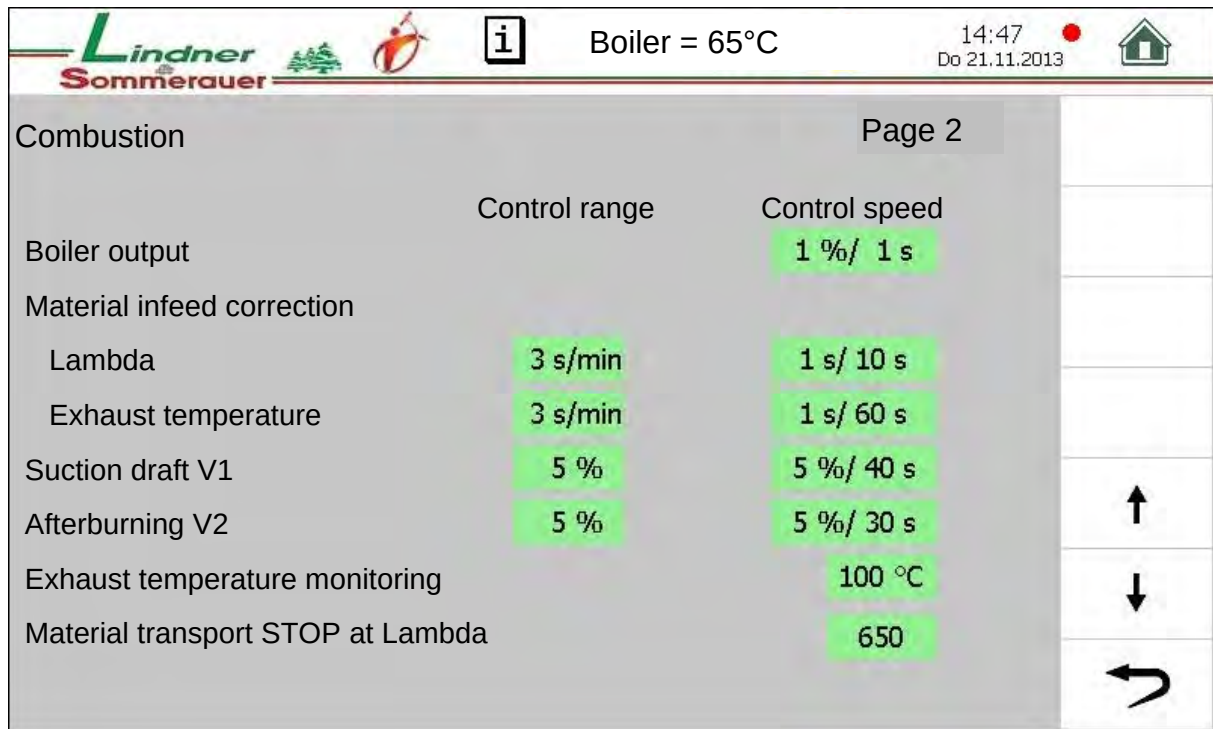


Fig. 3700

Boiler output: Speed at which the boiler takes up heat provision again e.g. after glow maintenance.

Material insert correction: To achieve the best combustion at all times, the control has the option to vary the values: Material infeed, suction V1 and afterburning V2 in a specific bandwidth (control range) and at a specified speed (Control speed). The control range can be added to or subtracted from the calculated target value.

Exhaust temperature monitoring: Variable specification for the tolerance range of the exhaust temperature rated load. The exhaust temperature can exceed the defined value by 50% and undercut it by 100%. If the boiler does not reach the tolerance threshold, cleaning is performed.

Instead of the exhaust temperature, the combustion chamber monitoring is displayed in operation with a functional module; the function is according to the exhaust temperature monitoring.

Material transport STOP at Lambda: Variable specification; if the value is exceeded, the fuel supply will stop until the value is undercut again.





i

Boiler = 65°C

14:47
Do 21.11.2013



Combustion
Page 3

Ignition insert	0 s	15 s	
Ignition cycle time	0 s	80 s	
Maximum ignition duration	0 min	15 min	
Ignition temperature		100 °C	
Ignition temperature difference		10 °C	
Igniter lead	0 s	30 s	↑
Igniter lag	0 s	60 s	
Glow maintenance break time		8 min	
Glow maintenance duration		600 min	↶

Fig. 3800

Ignition insert: After the time of any "ignition lead" has expired, infeed is performed for the specified time.

Ignition cycle time: After the first ignition infeed, the control will start the material infeed cycles and add the runtime of the stoker screw. When the specified value is reached, the material supply will stop.

Maximum ignition duration: When the maximum ignition time is exceeded, an error message is output.

Ignition temperature: If the exhaust or combustion chamber temperature is above the ignition temperature, the control assumes that there are still embers in the combustion chamber. There is no ignition. The system will return to controlled operation.

Ignition temperature difference: If the exhaust temperature is $\leq$ the ignition temperature, the control will assume that there are no embers in the combustion chamber. Ignition will take place and the value of the ignition difference must be exceeded.

Ignition lead: To permit fast ignition, the combustion chamber can be preheated before the first material infeed.

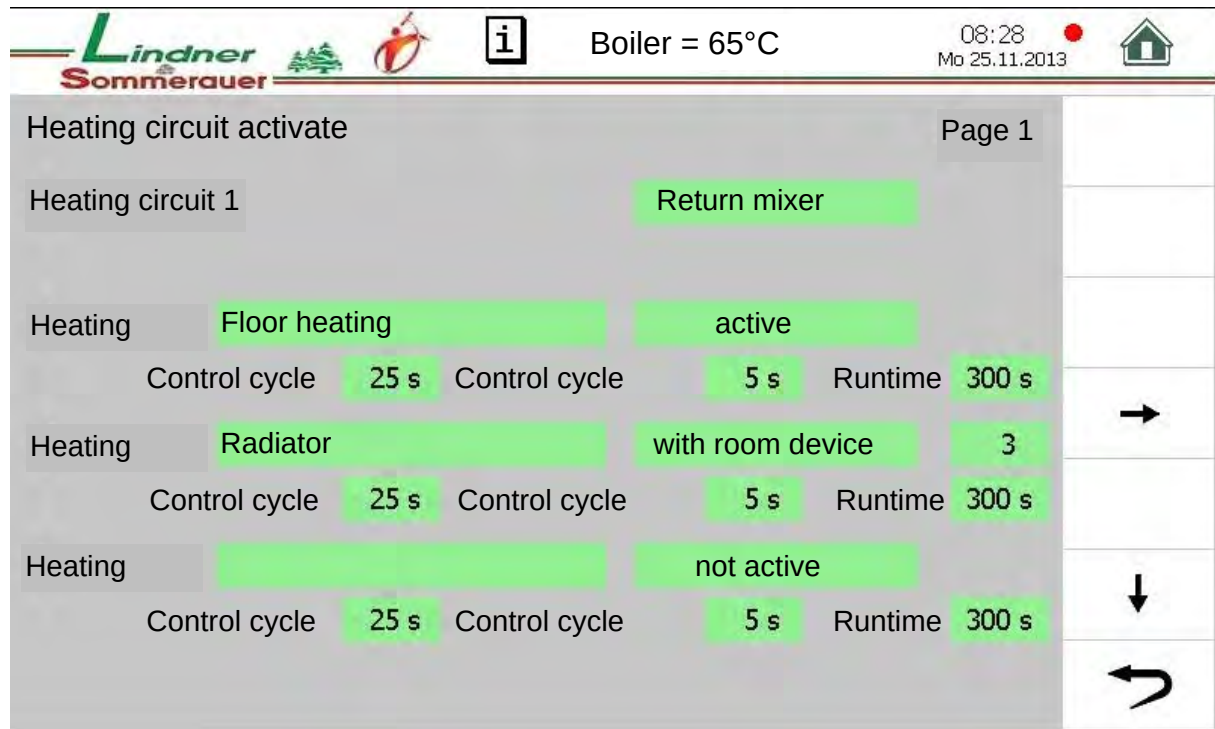
Ignition lag: For the material to not go out briefly after ignition, the ignition will lag.

Glow maintenance pause time: Value for the break time in glow maintenance.

Glow maintenance duration: When the maximum time for glow maintenance is reached, the boiler will switch off.

Activate Modules

Pushing "Parameter → Activate modules" will take you from the start page to this one.



The screenshot shows the 'Heating circuit activate' screen (Page 1) of the Lindner Sommerauer control interface. The top status bar displays the company logo, a home icon, the boiler temperature 'Boiler = 65°C', the time '08:28', and the date 'Mo 25.11.2013'. The main area lists three heating circuits with their respective settings:

Heating circuit	Configuration	Control cycle	Control cycle	Runtime
Heating circuit 1	Return mixer	25 s	5 s	300 s
Heating	Floor heating active	25 s	5 s	300 s
Heating	Radiator with room device 3	25 s	5 s	300 s
Heating	not active	25 s	5 s	300 s

Navigation buttons (right arrow, down arrow, and a curved arrow) are visible on the right side of the screen.

Fig. 3900

Heating circuit 1: The return increase with the associated pump, mixer and temperature sensor can be connected to the heating circuit 1. Alternatively, the return increase can also be connected directly to the main PCB. If necessary, heating circuit 1 can be set to the return mixer exclusively. This is done by pushing the green button.

Heating circuit 2: Pushing the first green field permits assigning a name. Pushing the second green field will activate the heating circuit (see Fig. 4000). If the option "With room unit" is activated, a third green field will appear. There you can specify, e.g., that the heating circuit 3 refers to the room unit of heating circuit 2.

Control cycle: At the distance of the control cycle, the "Lead ACT" and "Lead TARG" temperatures are compared and all mixers adjust accordingly. If your mixer continually switches from one extreme to the other, increase the time. This gives the inert temperature sensor more time to adjust.

Mixer adjustment time: If the "Lead temperature ACT" is more than 15°C above or below the "Lead temperature TARG", the mixer adjustment time is tripled. If the "Lead time ACT" is within $\pm 15^\circ\text{C}$, the control cycle has the value in seconds, that is set here. If the "Lead temperature ACT" is in a range of $\pm 1^\circ\text{C}$ of the "Lead temperature TARG", the mixer does not need to be adjusted.

Runtime: If the mixer only receives "Closer" signals under the time set as runtime because the "Lead time ACT" temperature is above the "Lead time TARG" temperature, it can be assumed that there is no energy demand and the pump is switched off. When the "Lead TARG" temperature is undercut, it is activated again.

When the runtime is set to 500 seconds (OFF), the heating circuit pumps will run on permanent operation.

Pushing the arrow to the right will take you to the heating circuits 5 to 16.

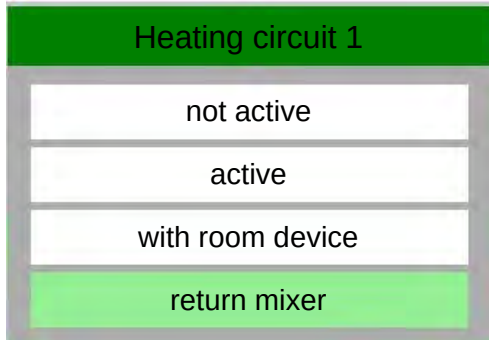


Fig. 4000

Possible settings for the heating circuits:

Not active: Factory setting at delivery: all heating circuits are deactivated.

Active: The heating circuit works according to the times defined in heating circuit (start screen).

With room unit: If there is a room unit, the control takes place via the room unit.

Return mixer: Only heating circuit 1 can be defined as a return mixer.

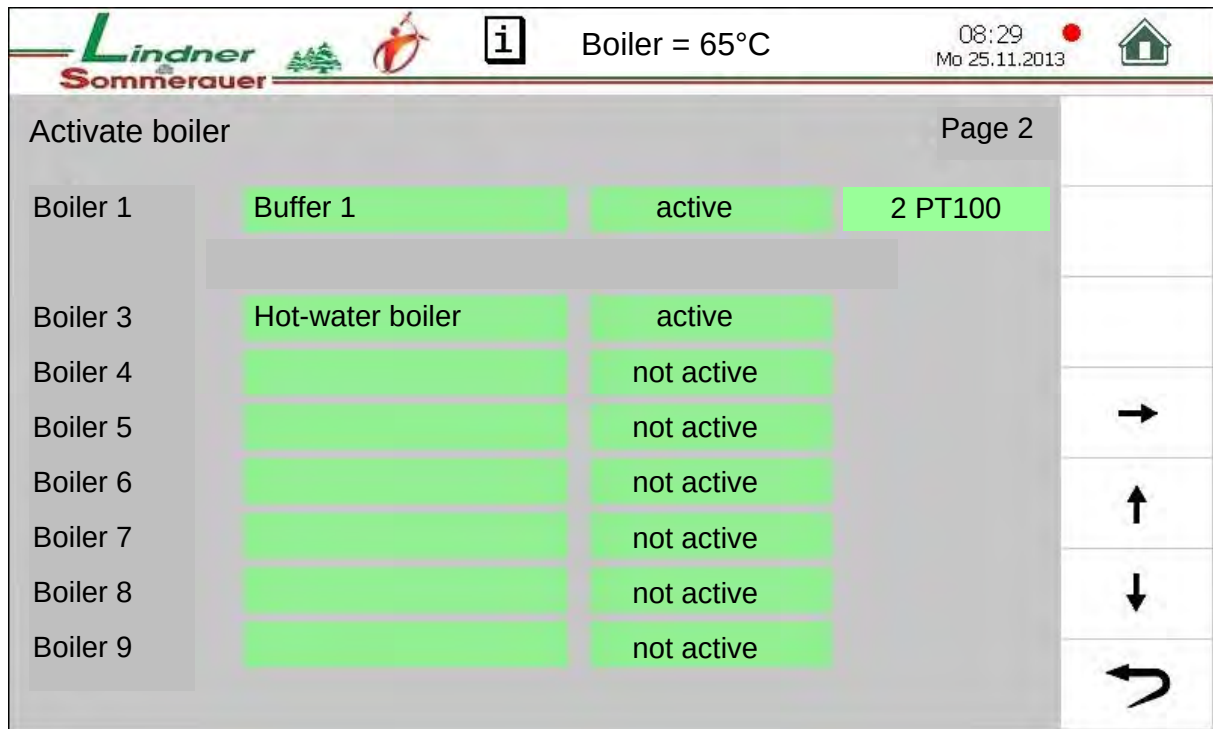


Fig. 4100

The boiler 1 is activated as buffer 1 with two temperature sensors (2 PT100). The temperature sensor of boiler 2 is used as a second PT100 for boiler 1 and therefore invisible.

Boiler 3: Is defined as boiler with a temperature sensor. Pushing the arrow to the right will take you to the boiler overview 10 to 18 or 19 to 24. Only for boilers 1, 4, 7, 10, 13, 16, 19, 22 can the parameters described in figure 4100 be defined.

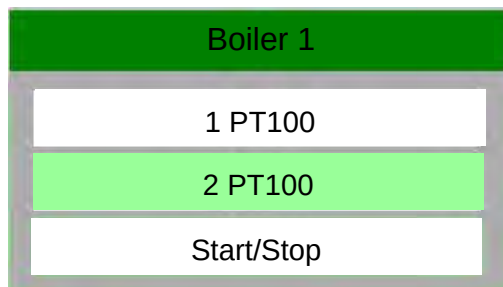


Fig. 4200

1 PT100: For standard settings, see Start Page → Boiler

2 PT100: The boiler can be switched to two-sensor operation here (is usually used in buffer operation to achieve precise layering). The sensor "B1" is installed as upper activation sensor, sensor "B2" as bottom deactivation sensor. Sensor "B3" is used for an additionally installed process water boiler.

Start/Stop: The boiler charge starts when the starting temperature is undercut and stops when the TARGET temperature is reached, independent of operating mode and hysteresis.

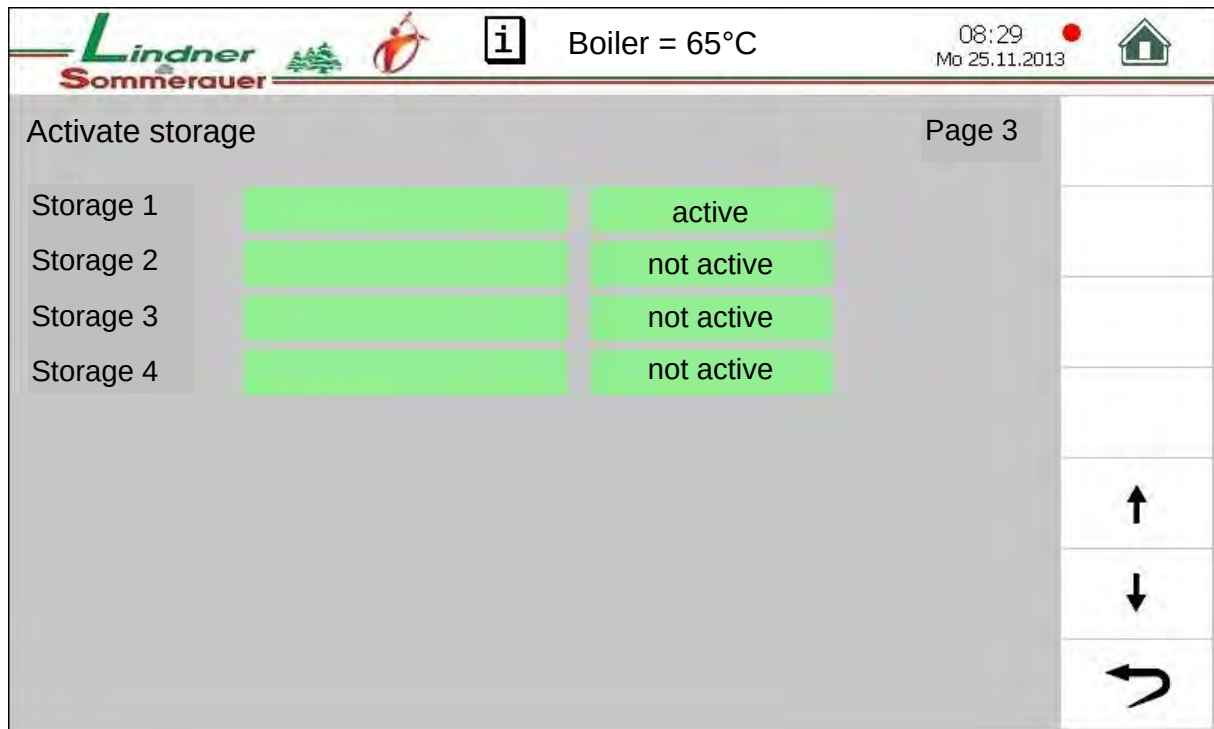


Fig. 4300

If a storage module is present, the storage can be activated here.

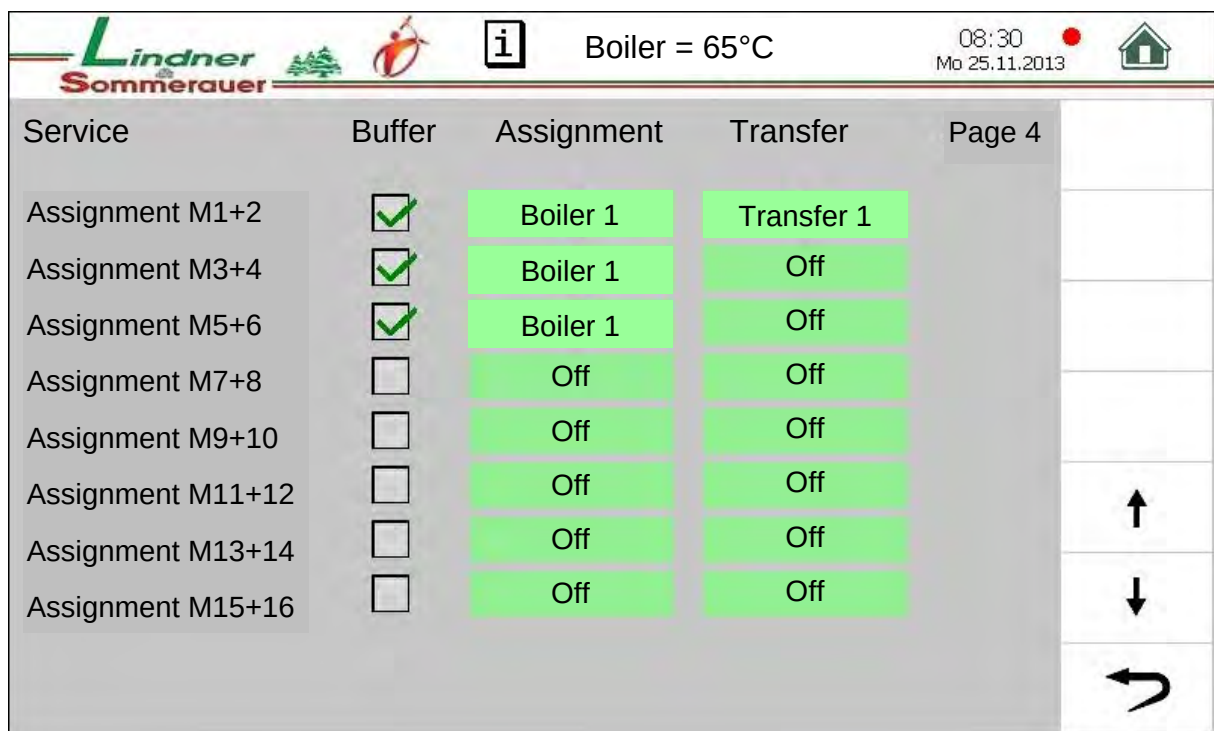


Fig. 4400

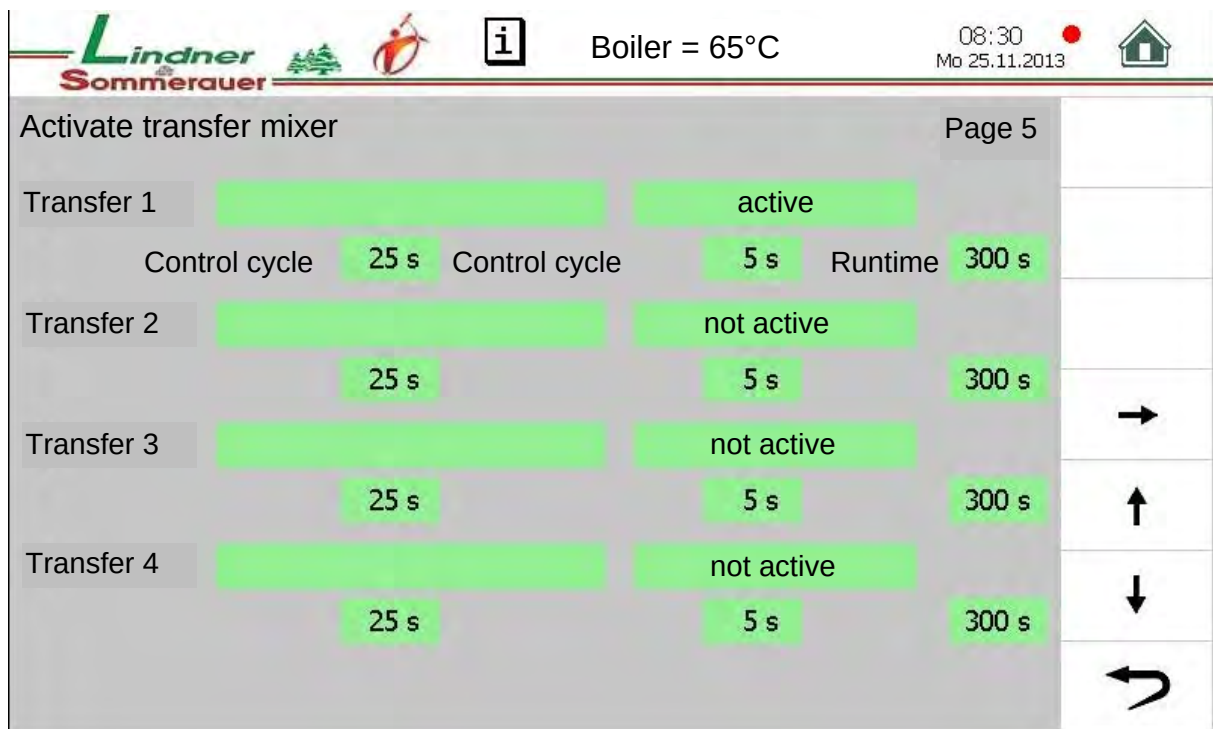
In the above example, the heating circuits 1 to 6 are assigned to boiler 1. This means that the heating circuits distribute heat when the required minimum temperature is

present in the buffer (boiler 1). This happens independently of the temperatures at the boiler.

The buffer provides the heat needed by the heating circuits and requests heat from the boiler when required.

It can also be defined here whether any present transfer heating circuit collects energy directly from the boiler (no checkmark) or from the buffer (with checkmark).

Only the boilers 1, 4, 7, 10, 13, 16, 19, 22 and storages 1 to 4 can be assigned heating circuits.



Transfer	Control cycle	Control cycle	Runtime	Status
Transfer 1	25 s	5 s	300 s	active
Transfer 2	25 s	5 s	300 s	not active
Transfer 3	25 s	5 s	300 s	not active
Transfer 4	25 s	5 s	300 s	not active

Fig. 4500

Activate transfer mixer: The transfer and network mixers can be activated according to the heating circuits (fig. 4500).

Activated network mixer: Pushing the arrow to the right can activate the network mixers if required.

Difference between transfer mixer and network mixer:

Transfer mixer: The transfer mixer's pump only distributes heat energy when an assigned heating circuit or boiler/buffer requires energy (fig. 5200).

Network mixer: The network mixer pump permanently provides the heat energy in the local heating network. The release parameter must be met (fig. 5300).

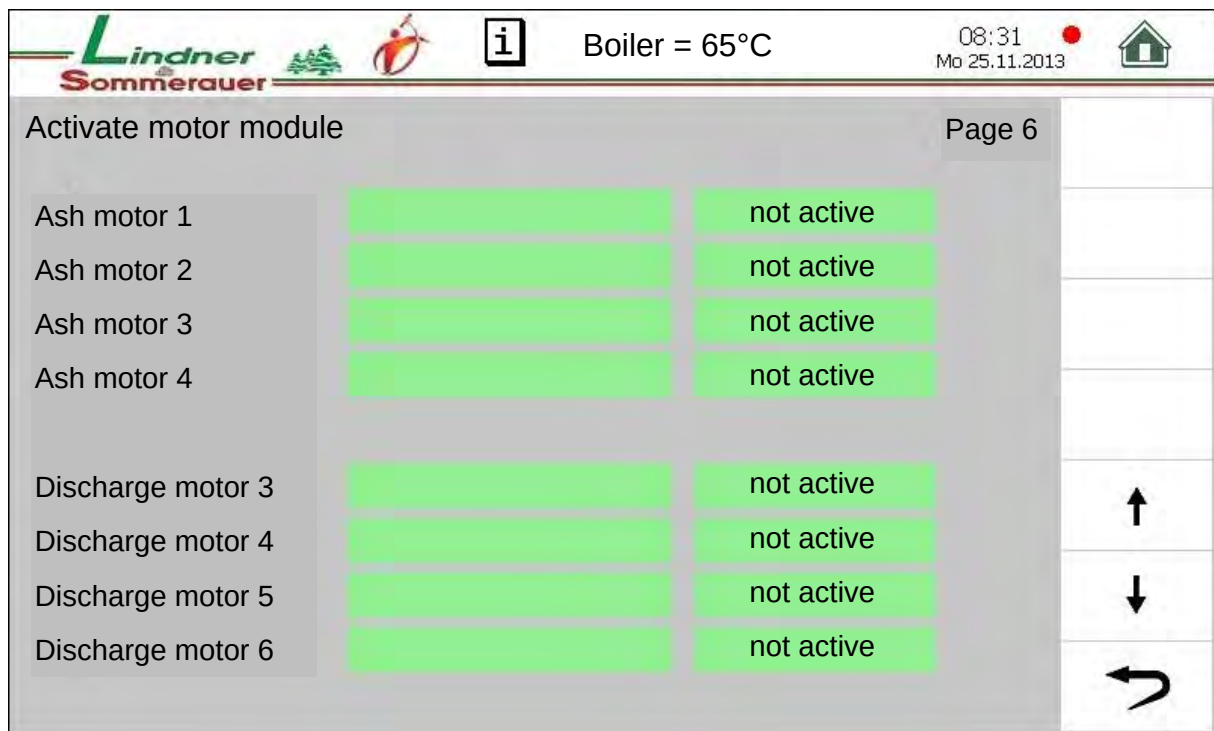


Fig. 4600

Ash motor or discharge motor: As already described, the motors can be activated or deactivated. Any name may be assigned in the first green field.

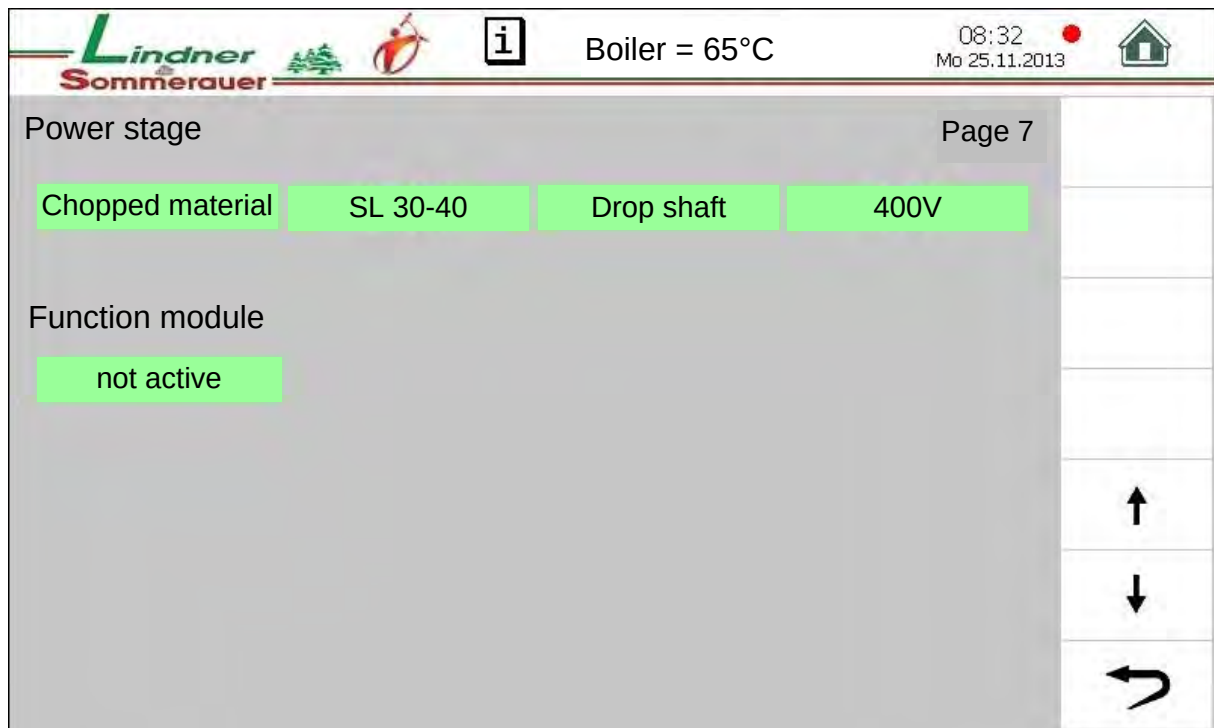


Fig. 4700

Several settings can be made after the password is entered:

Heating material: Selection of the heating material between chopped material and pellets.

Rated output: Selection of the rated heat output in several output stages.

Material supply: Selection of whether the fuel transport takes place via the drop shaft or a suction system.

Voltage: Selection of the operating voltage 400V or 230V.

Function module: If a function module is present, it can be activated here (usually for systems with a rated heat output $\geq 199\text{kW}$).

The settings described above are already pre-set!

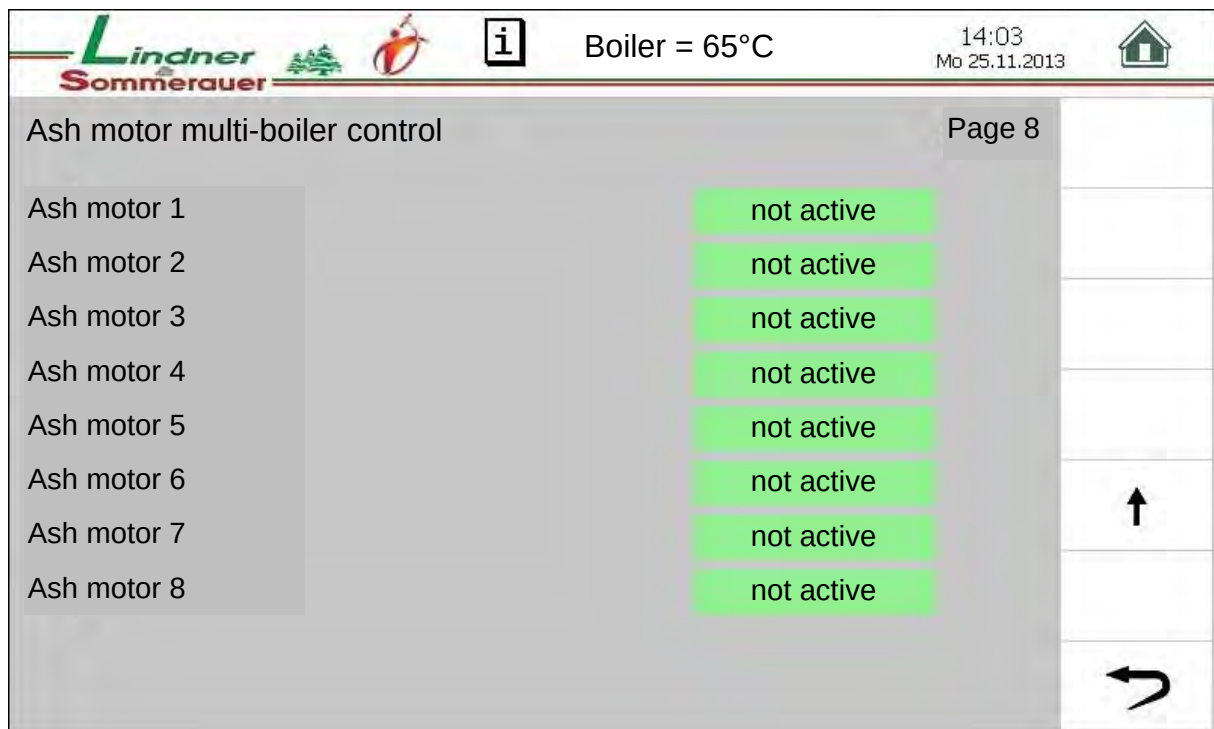
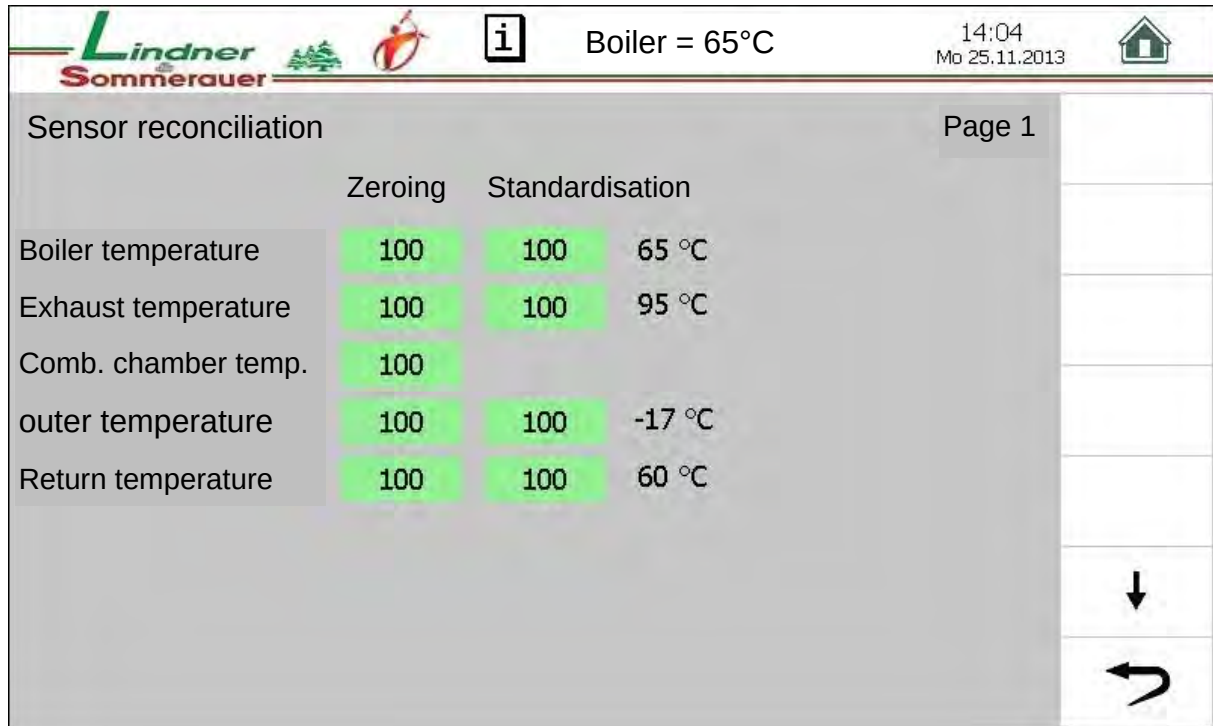


Fig. 4800

Optional: If a multiple-boiler control with automatic ash discharge is installed, here it can be defined which motors will start working when cleaning starts at the boiler.

Sensor Reconciliation

Pushing "Parameter → Sensor reconciliation" will take you from the start page to this one.



	Zeroing	Standardisation	
Boiler temperature	100	100	65 °C
Exhaust temperature	100	100	95 °C
Comb. chamber temp.	100	100	-17 °C
outer temperature	100	100	60 °C
Return temperature	100	100	60 °C

Fig. 4900

If the above temperatures are not displayed properly, there is the option to correct the displayed value via zeroing or standardisation. Zeroing corrects the lower limit, standardisation the upper one. If the adjustable value is corrected downwards, the measured temperature increases. If the value is corrected upwards, the measured value reduces. The sensor reconciliation on the following pages works according to the procedure described here as well.

Error Storage + Data Logger

Pushing "Parameter → Error storage + data logger" will take you from the start page to this one.

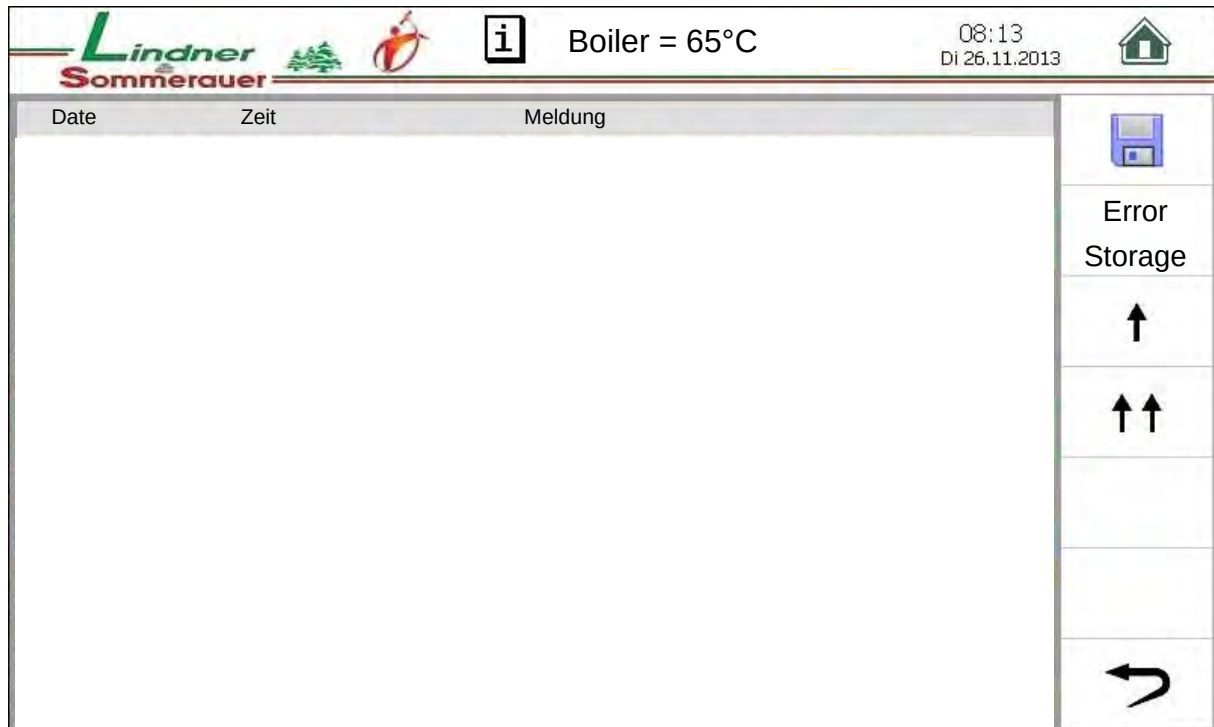


Fig. 5000

Data logger: The data logger logs processes performed by the system (cleaning, ignition, controlled operation, system off by xxx, etc.). This way, it can be understood, how the system works. Pushing the button "Save" exports the data logger or error storage to a USB drive.

Error storage: This only displays error messages, but no status displays.

Arrow: Pushing this button takes you one line up or down.

Double arrow: Pushing this button takes you one page up or down.

Recording

Pushing "Parameter → Recording" will take you from the start page to this one.

Currently without function:

Return flow increase

Pushing "Parameter → Return increase" will take you from the start page to this one.

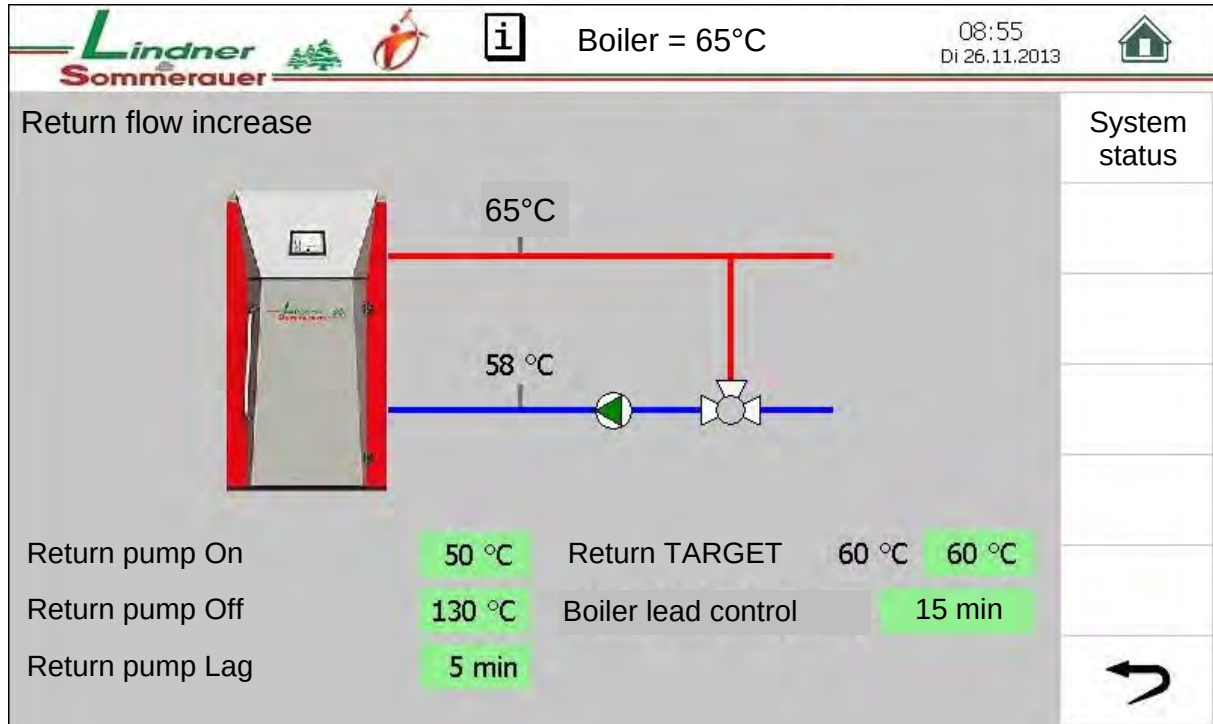


Fig. 5100

Return pump on: The pump will start at this boiler temperature.

Return pump off: The return increase pump will stop at this boiler temperature. **After deactivation of the return increase pump, the heat reduction must be warranted by the heating circuit pumps!**

Return pump lag: If the boiler undercuts the temperature for "return pump on", the pump will lag for a defined time until it switches off or the temperature rises again.

Return target: Intended return temperature (green field) and calculated return temperature

Boiler lead control: If the lead control is active, in which case a value is displayed in minutes, the return target temperature is calculated according to a formula. The control will review the actual return temperature at defined time intervals, compare it to the boiler TARGET temperature and correct it according to the stored formula. The control will always try to maintain the lead temperature at 2°C below the boiler target temperature.

If the return increase is not controlled thermally but via a three-directional mixer and an adjustment motor, it must be connected to the main board directly. Alternatively, the **1st heating circuit** may be used for this as well. Push "Parameter → Activate modules" and set heating circuit 1 to return mixer. You can verify this on the start page, item System status, where the return pump group is displayed.

Transfer Mixer, Network Mixer

Pushing "Parameter → Transfer mixer + network mixer" will take you from the start page to this one.

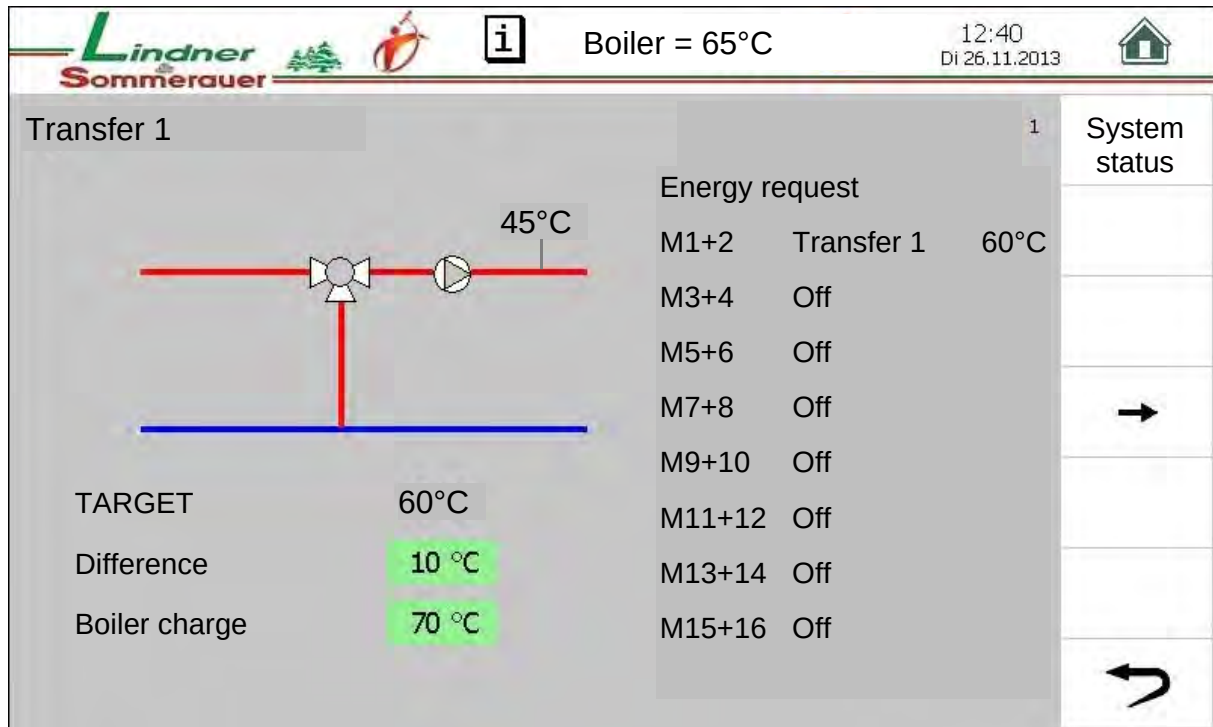


Fig. 5200

TARGET: The calculated target lead temperature according to specification by the heating circuit or fixed value for the boiler charge

Difference: To balance out possible line loss, the lead can be increased by the value defined in the difference.

Boiler charge: If a boiler must be charged, this is done with a lead temperature of 70°C in the above example.

Energy request: The heating circuits 1 and 2 are assigned to the transfer mixer 1. At least one of the heating circuits requests heat at a lead temperature of 50°C. To balance out any heat loss in the line, the TARGET lead temperature is increased by 10°C. At the moment, the lead temperature is 45°C.

There is no energy request from the boiler, since the TARGET lead temperature would otherwise have to be 70°C. An energy request from the boiler will not increase the TARGET lead temperature by the difference value.

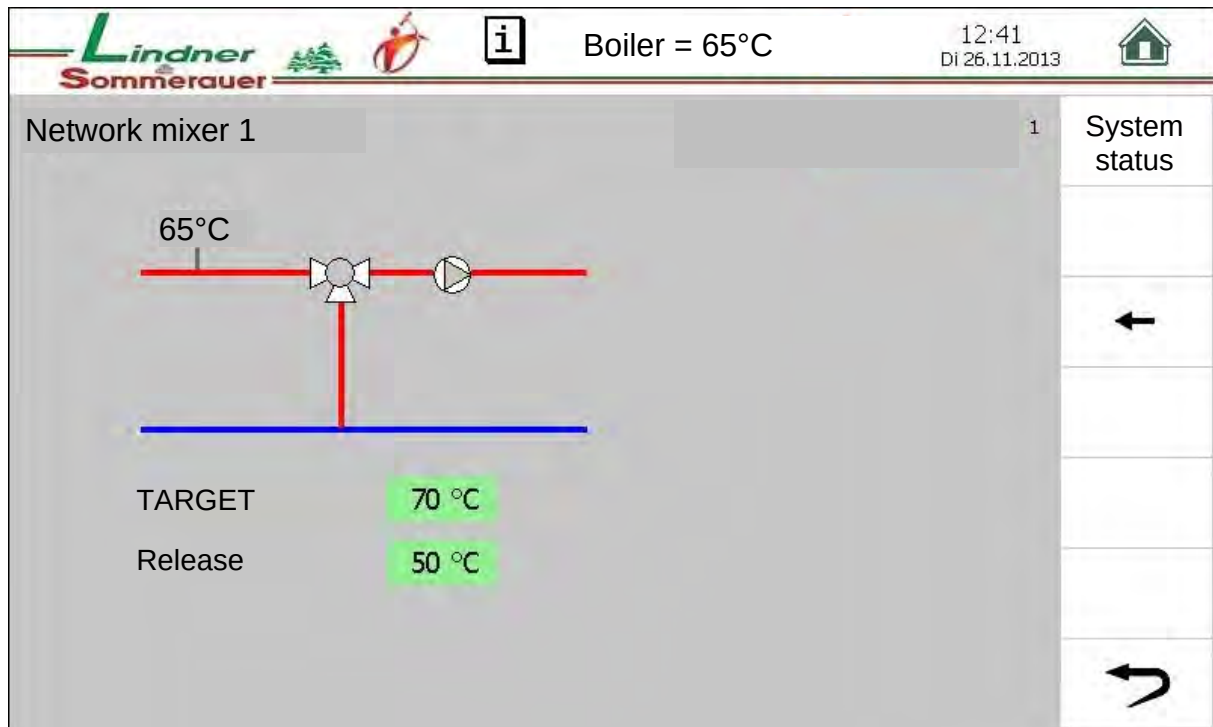


Fig. 5300

TARGET: Target temperature in the heat network.

Release: The network pump will start from this temperature onwards, and only stop when the set temperature is undercut.

The activation temperature refers to the top storage sensor. If a temperature of, e.g., $\geq 50^{\circ}\text{C}$ is present there, the pump will start; if the temperature drops, e.g. to $< 50^{\circ}\text{C}$, the network pump will stop.

The pump will not switch off except if the specified temperature is undercut, and will provide the heat to a local heating network around the clock.

System, Network, Programmes

Pushing "Parameter → System, network, programmes" will take you from the start page to this one.

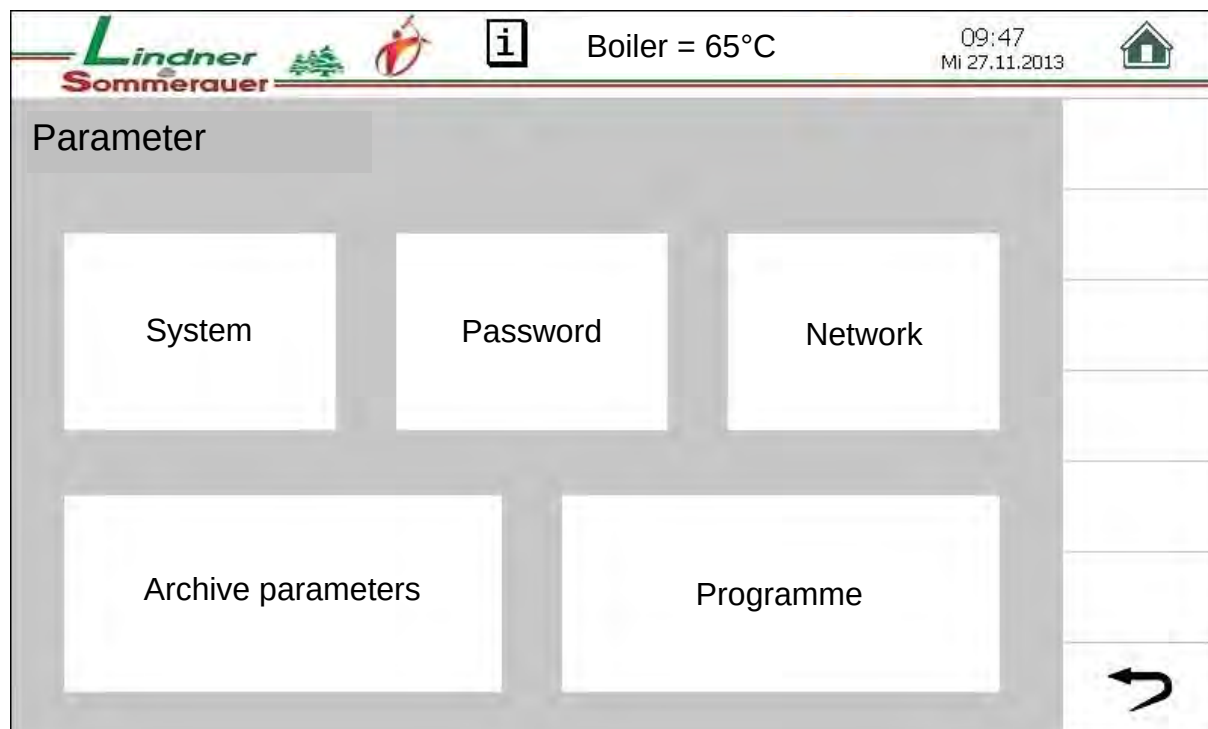


Fig. 5400

System

Pushing "Parameter → System, network, programme → System" will take you from the start page to this one.

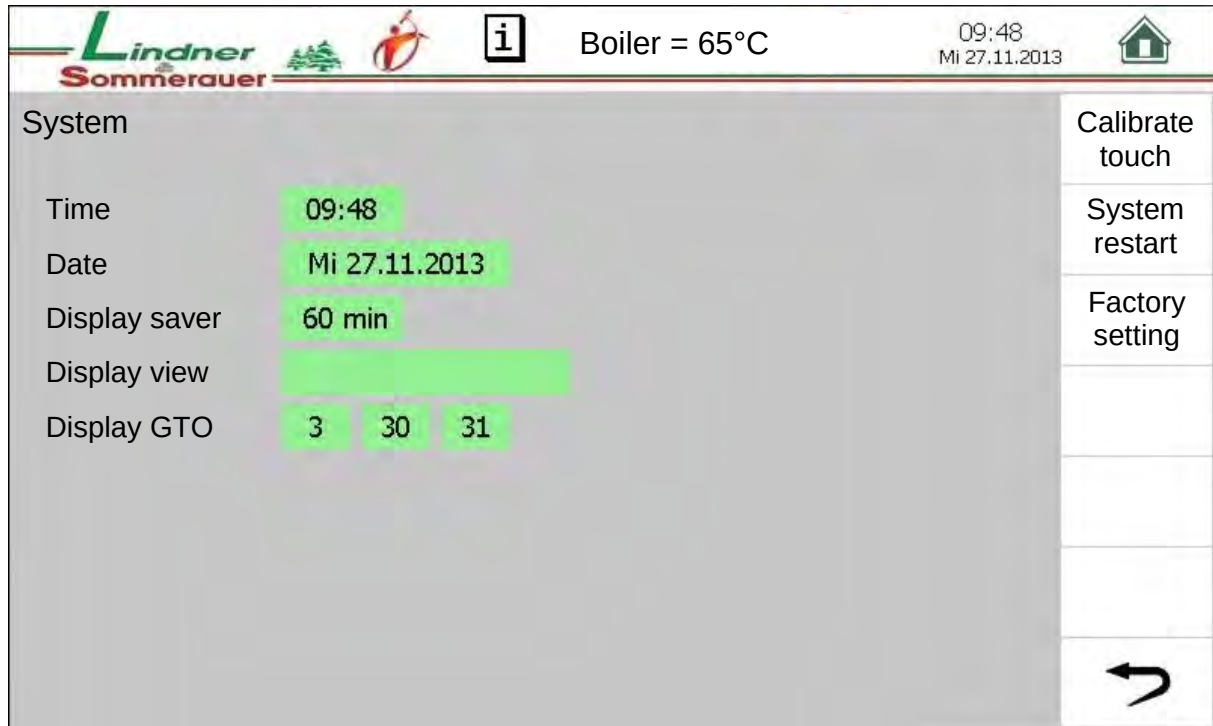


Fig. 5500

Time: The time can be set here.

Date: The date can be set here.

Display saver: After the defined time has expired, the screen will be black and the screen saver will be active. Pushing the surface of the touch operating panel will make the usual interface visible again.

Display view: The display view can be turned by 180° (landscape format or rotated landscape format). A subsequent restart is required for the settings made to become active.

Display TO: no function

Calibrate touch: If this button is pushed, the buttons at the touch operating panel can be calibrated.

Always follow the instructions and the coordinate cross.

System restart: This restarts the touch operating panel.

Factory settings: After entering the password, the touch operating panel will be reset to the factory condition.

ATTENTION: All settings are lost!

Password

Pushing "Parameter → System, network, programme → Password" will take you from the start page to this one.

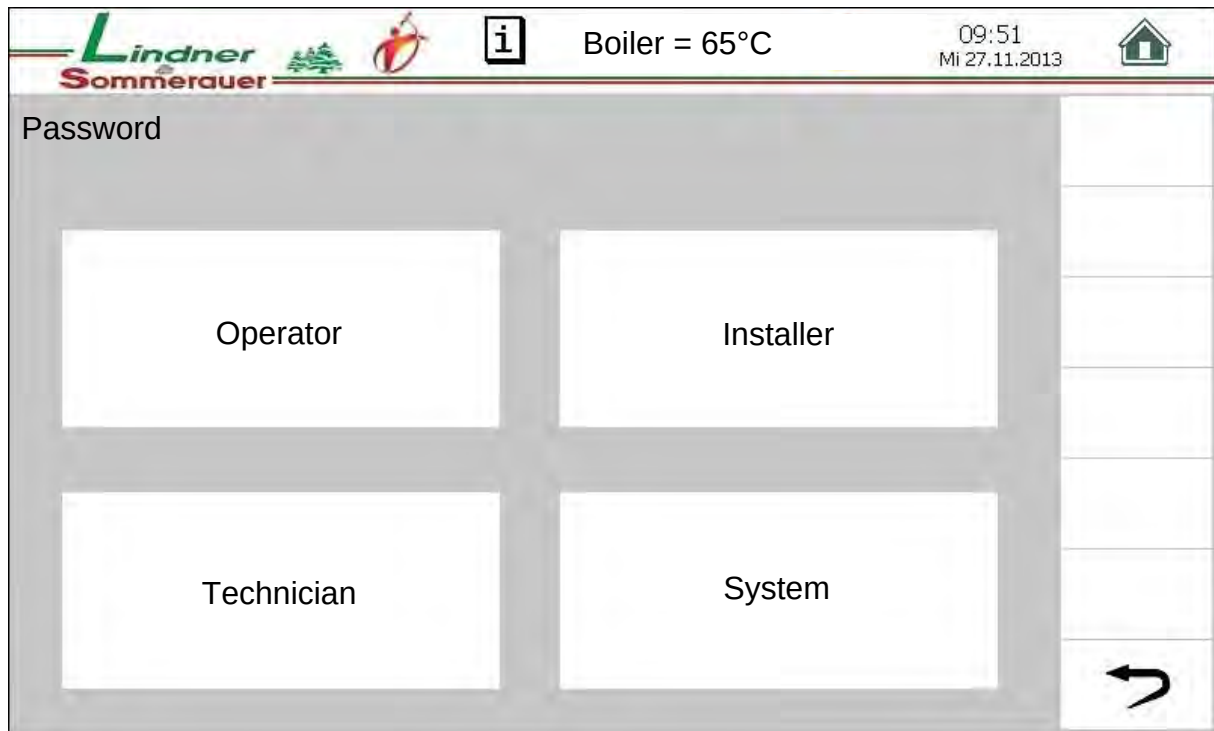


Fig. 5600

On the password page, you can choose the password to be changed.

There are three password levels:

- 1st level → Operator
- 2nd level → Installer
- 3rd level → Technician

If you are on the 1st password level (operator), you can only change this one. On the 2nd password level (installer), you can change the password for operator and installer. On the 3rd password level, you can change all 3 passwords.

Operator
Installer
Technician

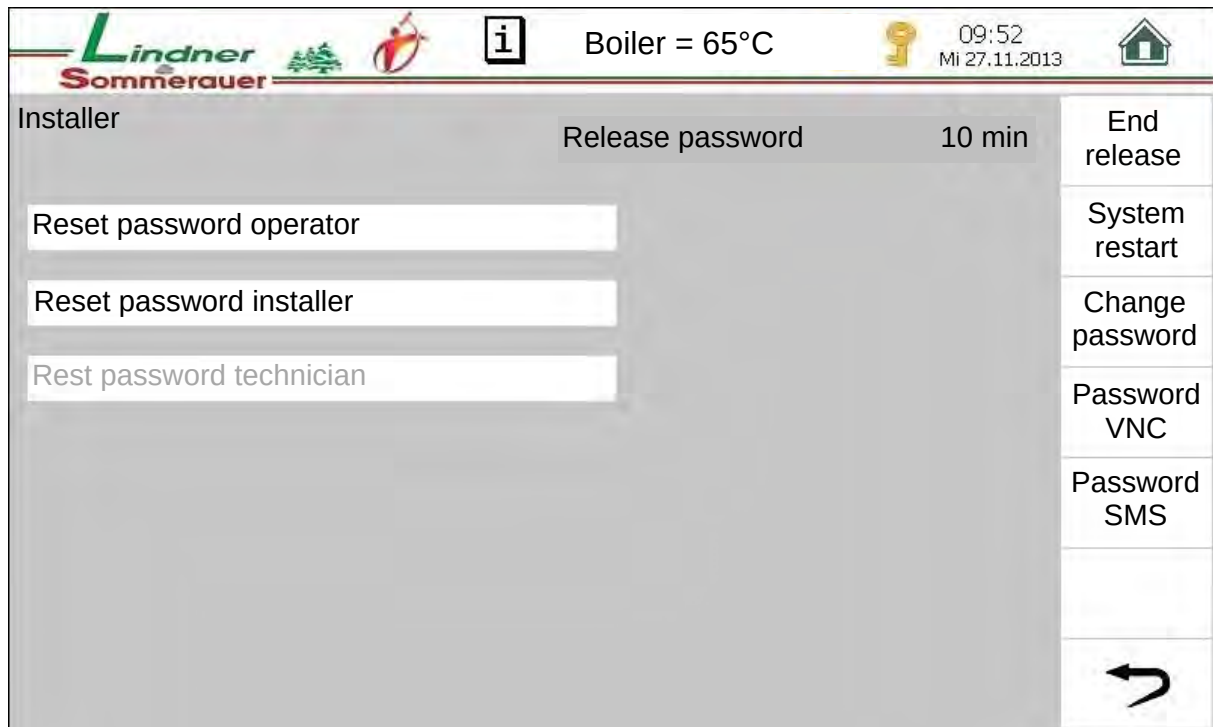


Fig. 5700

This screen shows the 2nd password level, where you can change the installer password. The operator and installer passwords can be reset to the factory setting. The technician password is greyed out and thus not available.

Terminate release: When pushing this button, release is terminated at once. Release is automatically terminated after 10 minutes. The key icon shows that release is active.

System restart: Pushing this button restarts the touch operating panel.

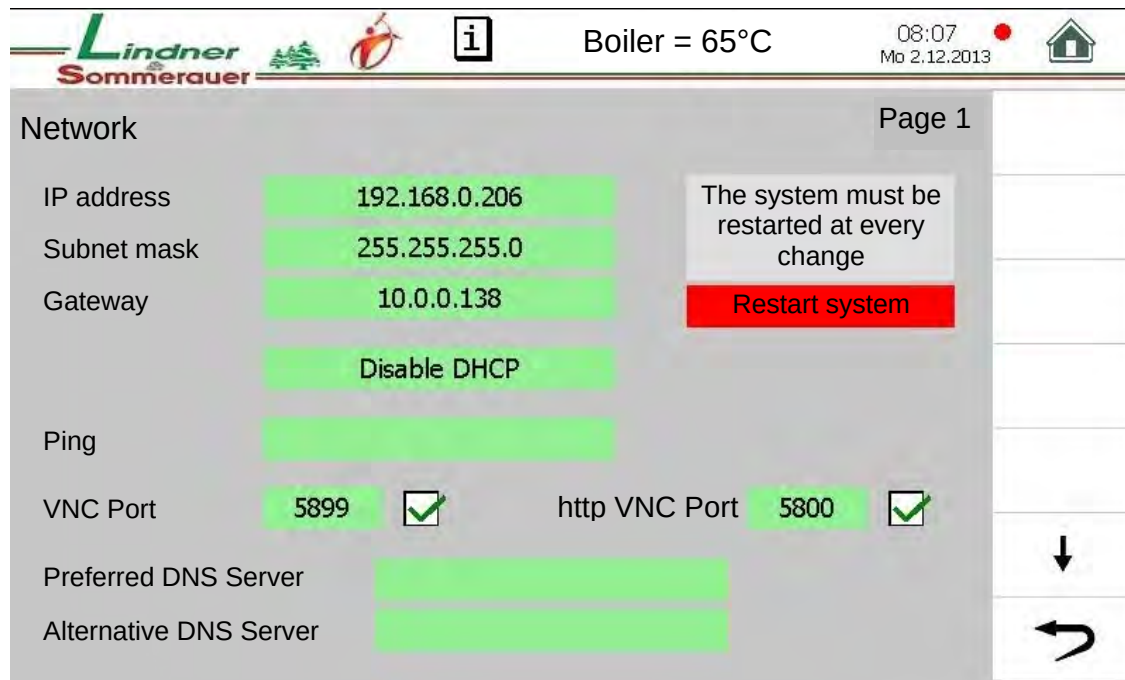
Change password: Any password can be entered here; the change is made after the password has been entered twice.

Password VNC: If online remote monitoring is installed, the access data can be changed here.

Password text message: If reporting via the mobile phone network is installed, the access data can be changed here.

Network

Pushing "Parameter → System, network, programme → Network" will take you from the start page to this one.



Network Page 1

IP address 192.168.0.206

Subnet mask 255.255.255.0

Gateway 10.0.0.138

Disable DHCP

Ping

VNC Port 5899 ☒ http VNC Port 5800 ☒

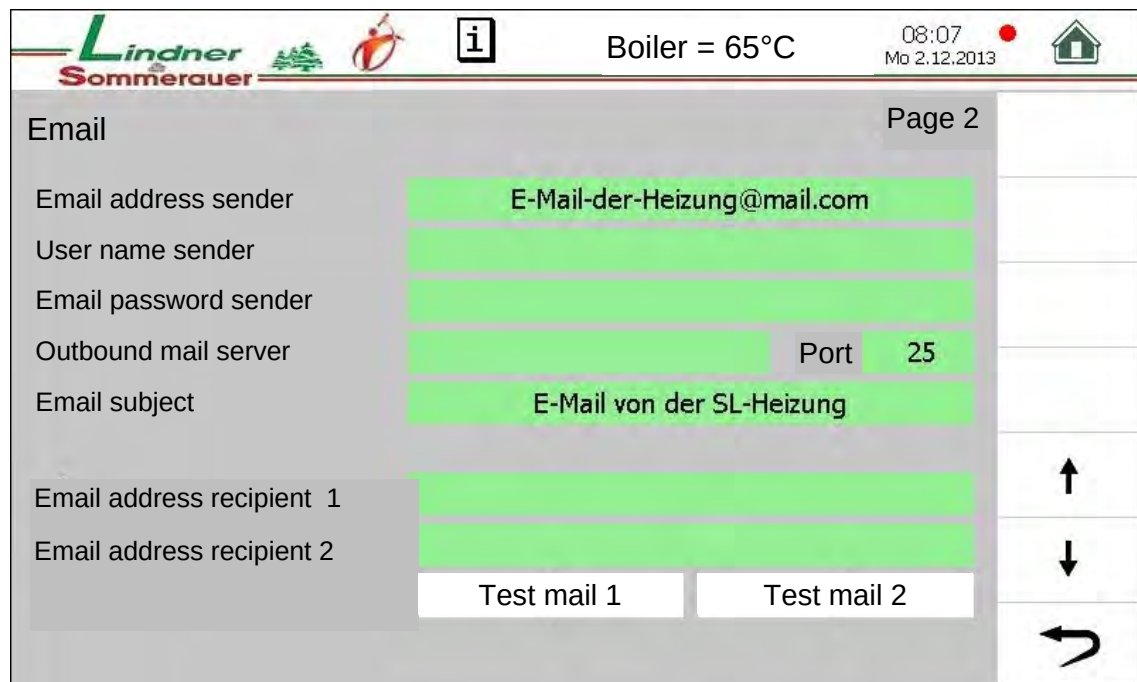
Preferred DNS Server

Alternative DNS Server

The system must be restarted at every change

Restart system

Fig. 5800



Email Page 2

Email address sender E-Mail-der-Heizung@mail.com

User name sender

Email password sender

Outbound mail server Port 25

Email subject E-Mail von der SL-Heizung

Email address recipient 1

Email address recipient 2

Test mail 1 Test mail 2

Fig.

5900

The system must be integrated into the local network by a network technician (fig. 5800 and 5700)

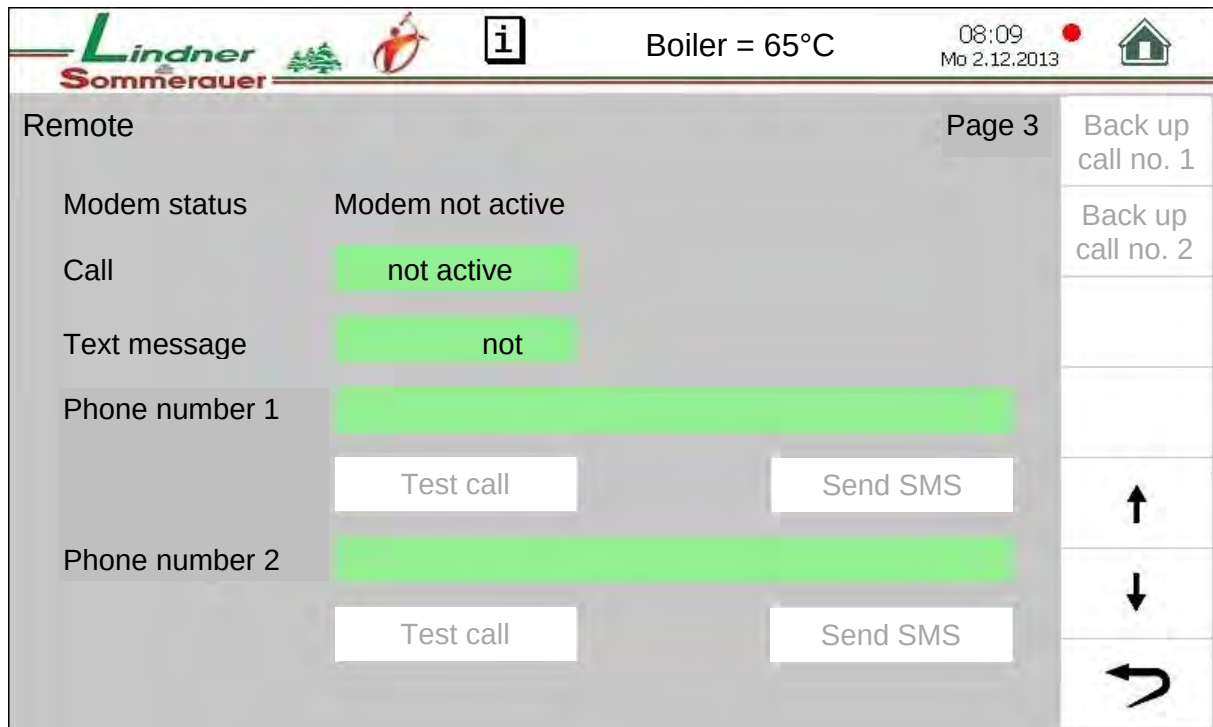



Fig. 6000

Modem status: If a mobile phone network modem is connected to the system, the status is displayed here (active, not active).

Call: A SIM card (not enclosed) from a mobile phone provider permits making a call in case of interference.

Attention: There will only be a call without a speech message!

Text message: A SIM card (not enclosed) from a mobile phone provider permits sending a test message with the error text in case of interference.

Phone no.: Up to two phone numbers can be entered.

Process of call and/or text message alarming: If there is an interference in the system, there will be

- a call to phone number 1 after 10 minutes
- a text message to phone number 1 after 11 minutes
- a call to phone number 2 after 20 minutes
- a text message to phone number 2 after 21 minutes
- a call to phone number 1 after 30 minutes
- a text message to phone number 1 after 31 minutes
- a call to phone number 2 after 40 minutes
- a text message to phone number 2 after 41 minutes
- a call to phone number 1 after 50 minutes
- a text message to phone number 1 after 51 minutes

There will not be any more alarms after this process is completed!

Function of the text message communication between the heating system and mobile phone:

Factory setting password: **0000**; Phone number entered correctly (fig. 5800)

Status request of the heating system from the mobile phone: Send password (0000) to heating system: *0000*

Answer heating system: System ON or system OFF

If the password is not correct, the heating system sends the following text: *Password incorrect*

Enter phone number by text message: Password (0000) phone number 1 or 2; *0000RUFNR1*, the heating system assumes the number as phone number 1 from the text message.

Reduce or heat heating circuits: Password (0000), select desired action (reduce or heat), select heating circuit (M1 to M16): *0000senkenM1* or *0000heizenM2*

Several heating circuits at once can be changed as well:

0000heizenM1,senkenM2,senkenM5,heizenM12

Answer heating system: Night red.M2,R5; the heating system lists all heating circuits that are currently reduced, e.g.: M2 by text message command and M5 by room device 5 (R5).

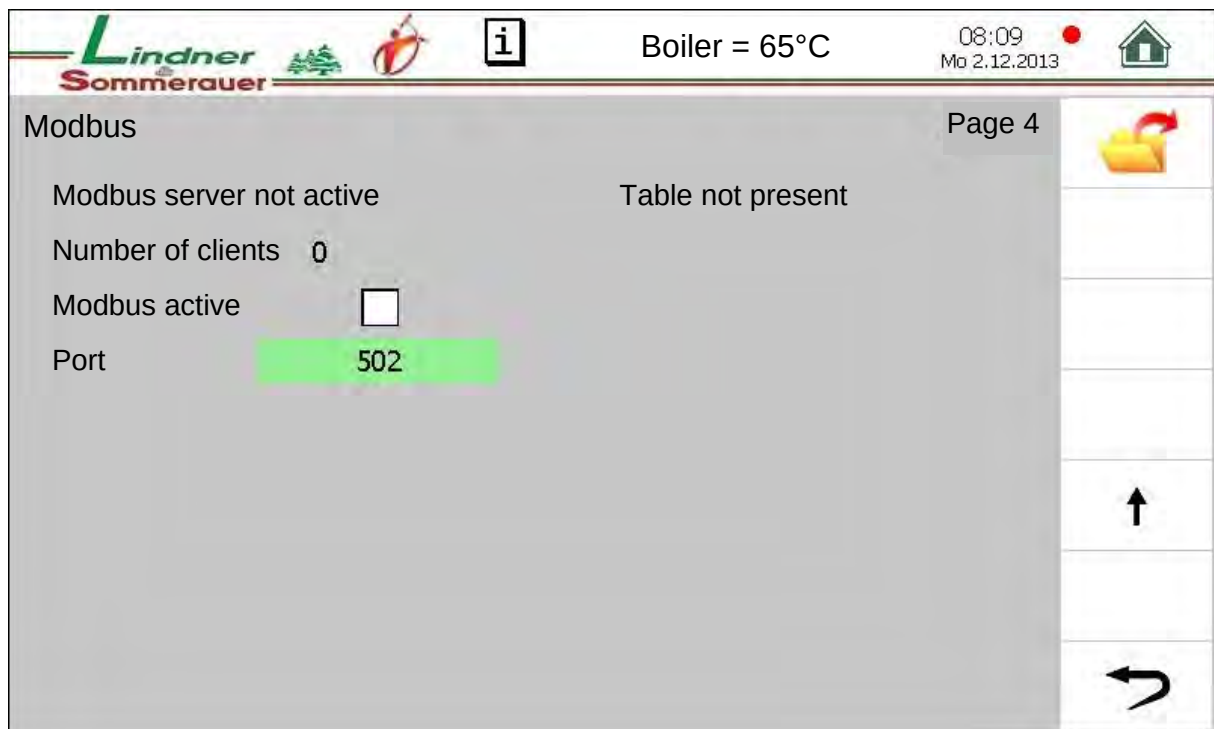


Fig. 6100

For instructions, see enclosure.

Archive parameters

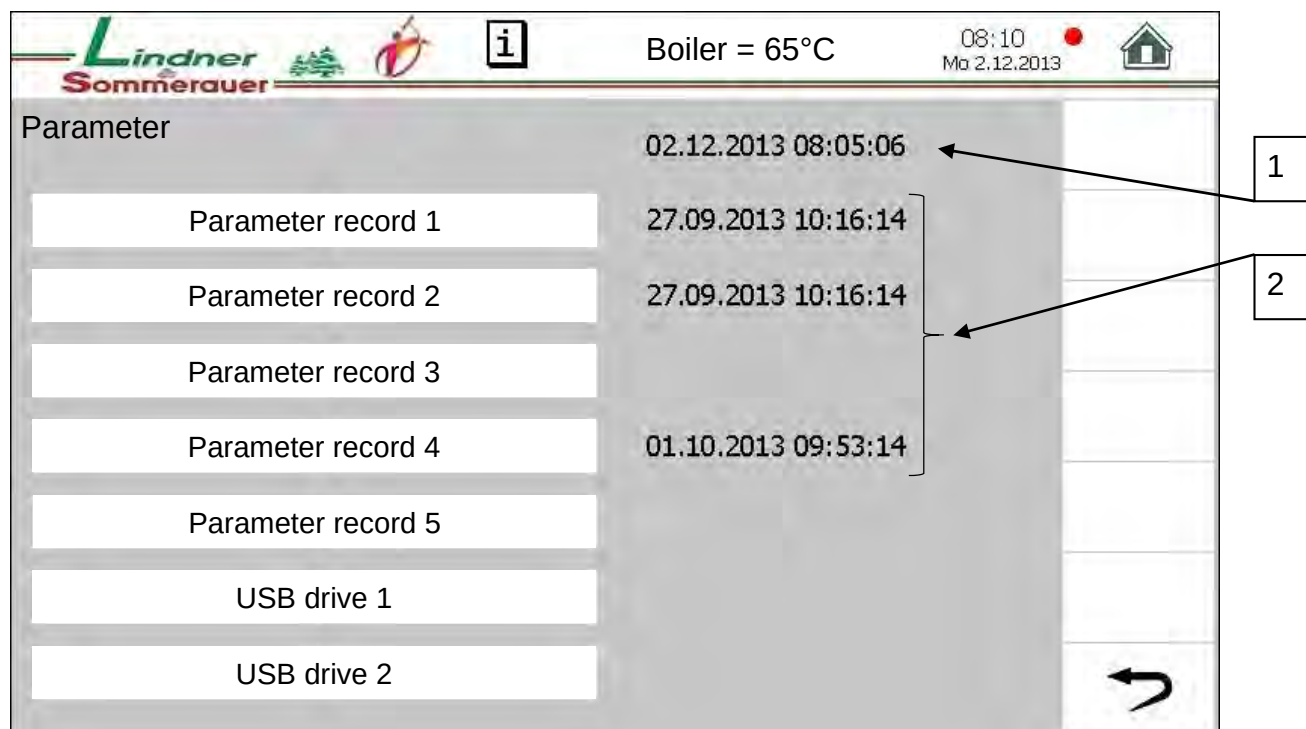


Fig. 6200

Ad item 1: The parameters were revised at the above date.

Ad item 2: The parameter records behind which there is a date save the individual settings. The date shows when the saved parameter record was revised or saved.

Programme

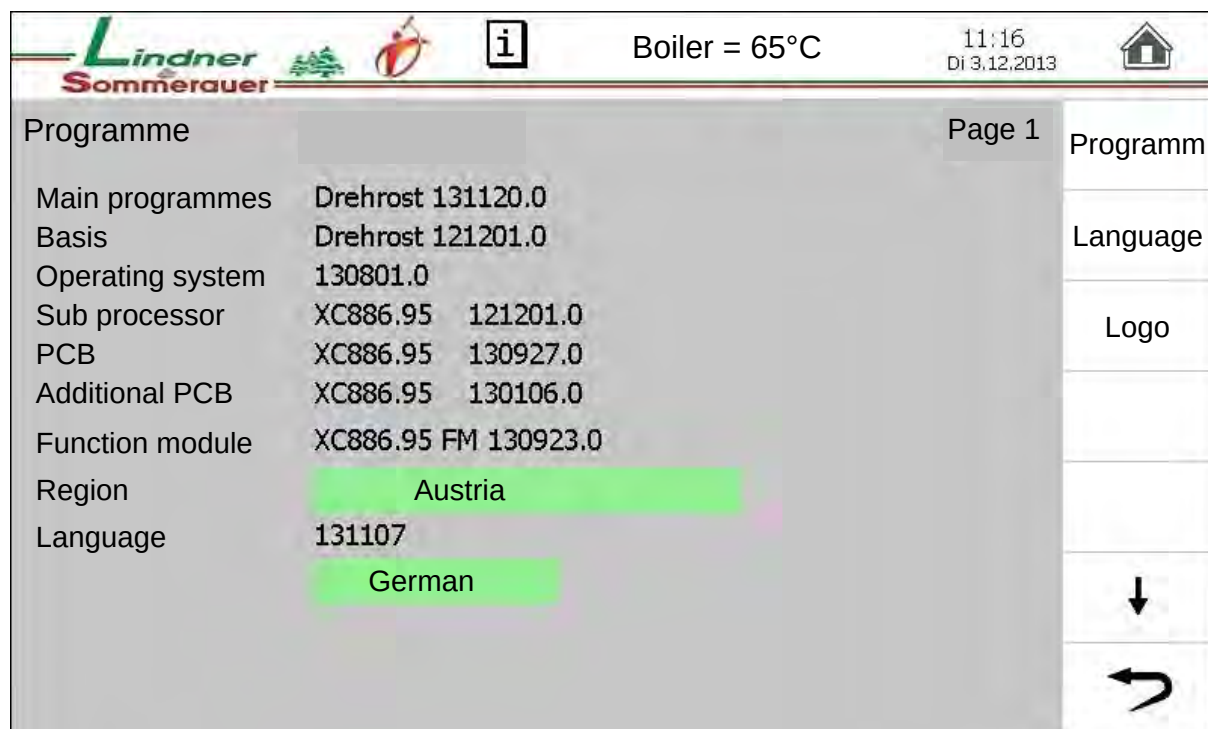


Fig. 6400

The upper half and the other pages contain lots of information on the software used.

Region: Depending on the language, the respective country-typical characters are stored in the parameter region.

Language: If a valid language file is stored, the display language can be changed.

Programme/Language/Logo: Push one of these buttons to open a window (fig. 6500), where you can choose (fig. 6500, item 1) whether a present software (fig. 6600, item 1.2) is to be activated or "new" software is to be uploaded from the USB drive (fig. 6600, item 1.1).

Pushing the icon "Save" (fig. 6500, item 2) opens another window (fig. 6700), in which you need to select the USB drive to back up the software.

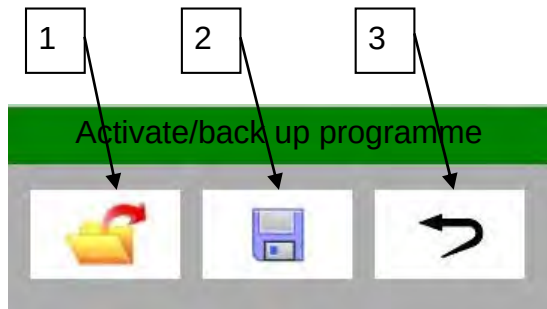


Fig. 6500



Fig. 6600

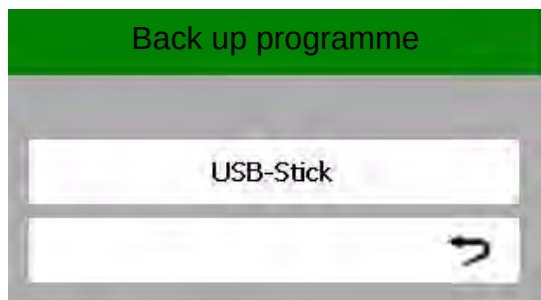


Fig. 6700

Boiler

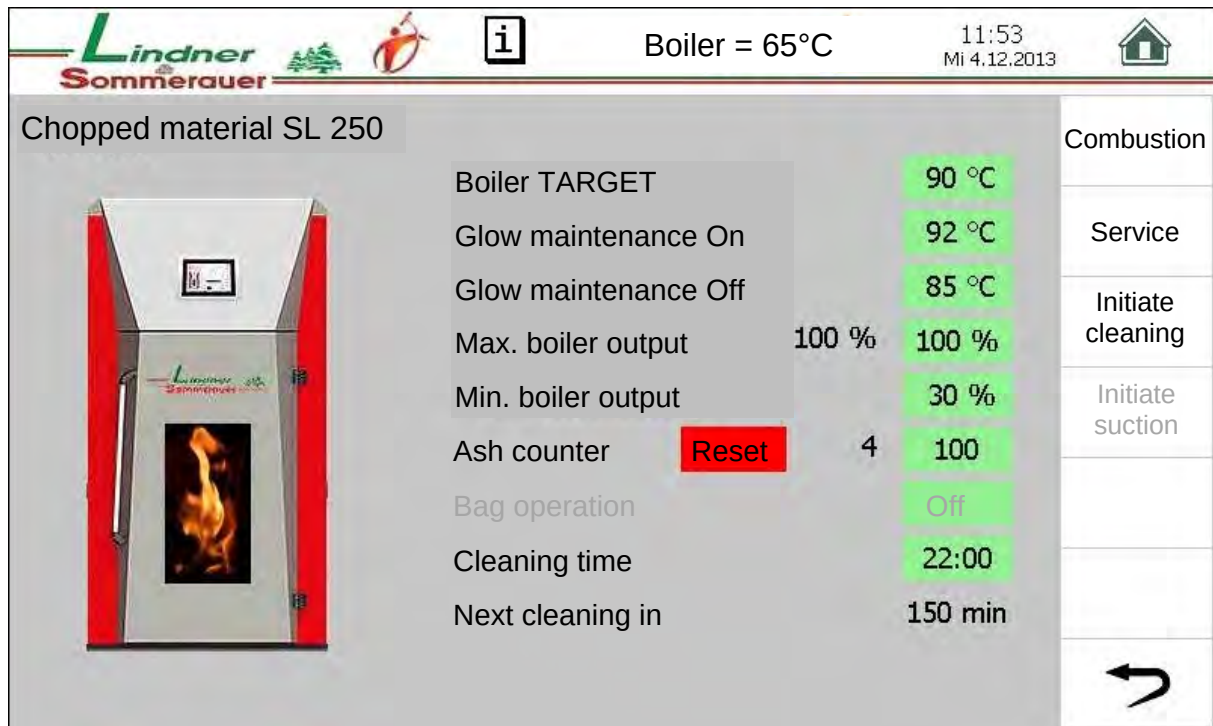


Fig. 6800

Boiler TARGET: Intended boiler temperature

Glow maintenance on: The boiler will render its specified output to the boiler TARGET temperature. After the "boiler TARGET temperature" is reached, it starts modulating (power reduction) until the defined temperature of parameter "glow maintenance ON" is reached.

The boiler TARGET temperature cannot be set above the glow maint. ON temperature.

Glow maintenance off: The boiler remains in glow maintenance until the "Glow maintenance off temperature" is undercut. It will then return to performance mode.

Max. boiler output: This parameter limits the maximum boiler output.

Min. boiler output: This parameter limits the minimum boiler output.

Ash counter: The number of cleaning cycles is counted. When the limit in the field with the green background is reached, the display asks the operator to empty the ash box. The "Reset" button zeroes the counter.

Bag operation: Only for pellets systems with a suction module. If this parameter is "On", the storage container is not filled automatically. Filling must be performed manually.

Cleaning time: This is the last cleaning of the respective day. This avoids disturbing night rest with the sounds arising during cleaning.

Next cleaning in: This parameter displays the remaining runtime of the stoker screw. When zero is reached, automatic cleaning is performed. When starting, cleaning takes place when the residual runtime of the stoker screw is ≤ 60 min.

Combustion: See Parameter → Combustion

Service: See Parameter → Service

Initiate cleaning: Initiation of manual cleaning; the parameter "Next cleaning in" is set to the starting value (see Service → Cleaning interval).

Initiate suction: Only for pellets systems with a suction module. Initiation of automatic filling of the supply container.

Manual Operation

Attention:

When moving the screws forward and back or when opening and closing the rotary grid, their cover must not be removed and you must not reach into the rotary grid.

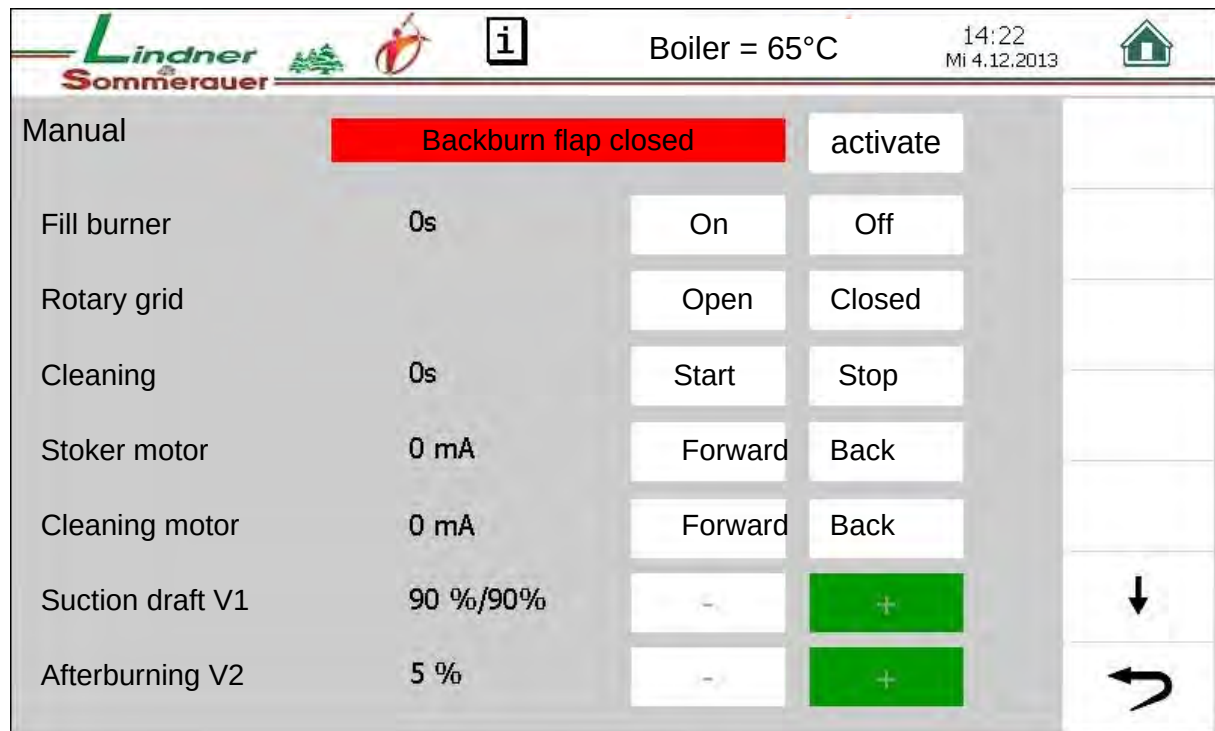


Fig. 8000

Fill burner: If the stoker channel and the combustion chamber have been emptied out, you can fill the combustion chamber again with the button "On". If "Burner filling" is activated with the button "On", the stoker screw will start conveying and the backburn flap will start opening at the same time; only when the backburn flap is opened completely will the discharge screw start supply.

Rotary grid: Manually open or close the rotary grid.

Cleaning: Manually clean the boiler. This cleaning leaves the parameter "Boiler → Next cleaning in" unchanged. There will not be any automatic ash discharge!

Stoker motor: Forward and reverse operation of the stoker screw

Cleaning motor: Forward and reverse operation of the cleaning motor

Suction draft V1: Activation of the suction draft V1 with display of the target and actual rotating speed in percent

Afterburning V2: Activation of the afterburning fan V2 with display of the target speed in percent

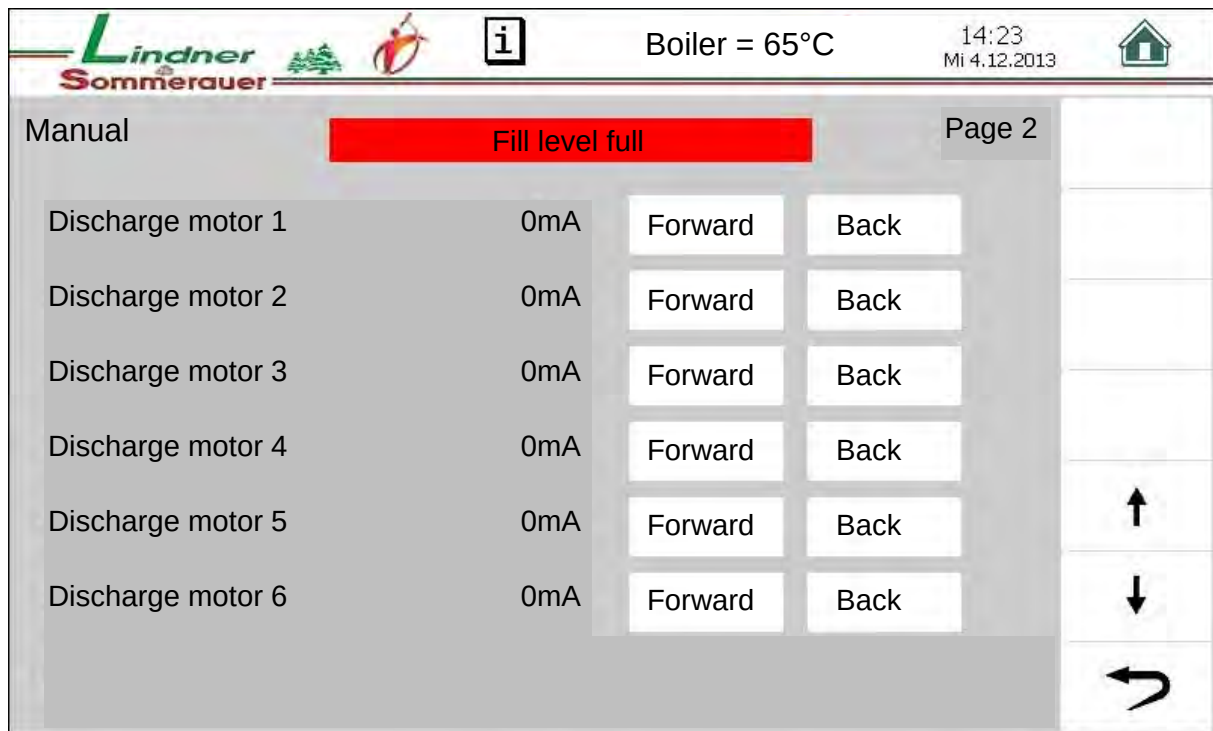


Fig. 8100

Fill burner: If the stoker channel and the combustion chamber have been emptied out, you can fill the combustion chamber again with the button "On". If "Burner filling" is activated with the button "On", the stoker screw will start conveying and the backburn flap will start opening at the same time; only when the backburn flap is opened completely will the discharge screw start supply.

Discharge motor: The present discharge motors can be run forward or backwards here. For safety-technical reasons, reverse operation is limited in time.

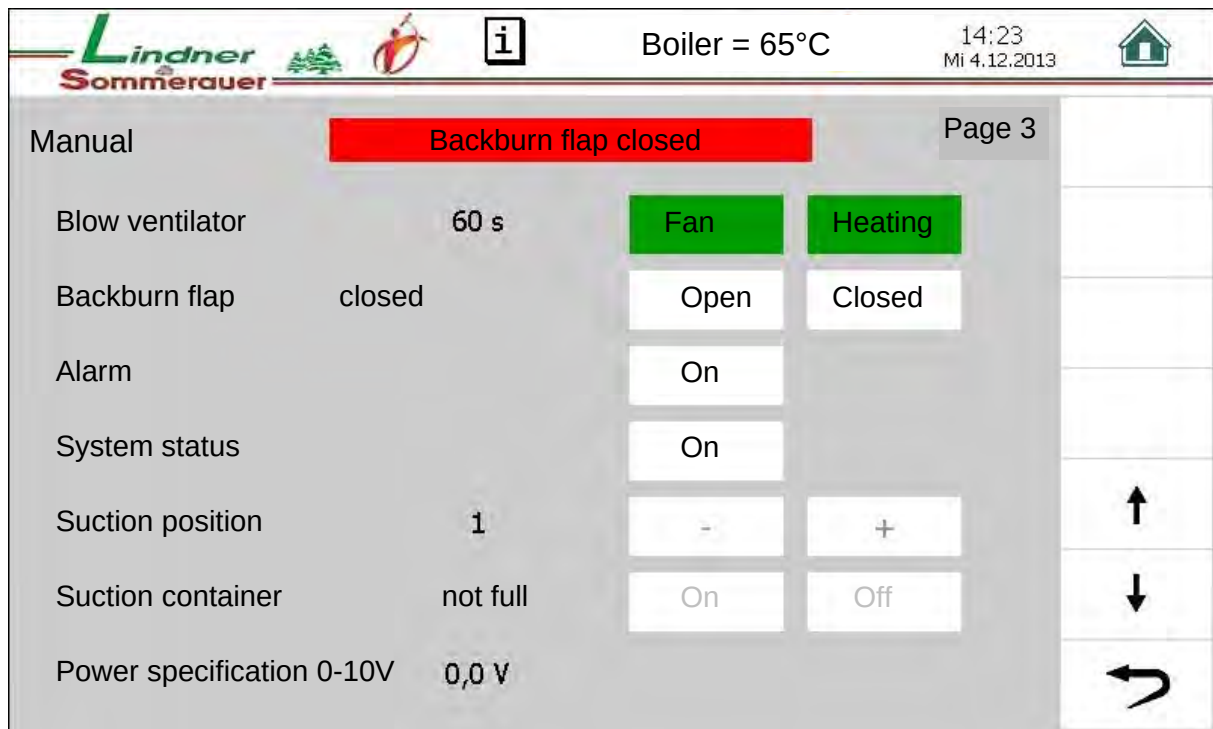


Fig. 8200

Blow ventilator: Fan and heater are active, i.e. there is currently an ignition. Ignition has been running for 60 seconds.

Backburn flap: The backburn flap is currently closed (closed). Can be run into the desired direction by operation of the respective switch

Alarm: To test the alarm function at the output 10 or in a basic module

System status: To test the output signal; the system status is output as system on or system off.

Suction position: Optional, when a suction module is present, e.g. switching from the suction position (suction probe) 1 to suction position 3 is possible

Suction container: Optional when a suction module is present; fill level display (full, not full)

Power specification 0-10V: If this function is activated, the currently pending voltage is displayed in volt for the output specification.



   Boiler = 65°C		14:24 Mi 4.12.2013	
Manual	Backburn flap 15 s	Page 4	
STB	<100 °C		
Water deficit protection	no water deficit		
Light barrier	closed		
Backburn sensor	< 70 °C		
Drop shaft	closed		
Rotary grid	closed		
Fill level	full		↑
External start	off		↓
Vacuum	0,25 mBar		
Furnace door	closed		↶

Fig. 8300

STB: Current status of whether the safety temperature limiter (STB; Sicherheitstemperaturbegrenzer) is measuring an overtemperature. If this is the case, the material supply is stopped and the system stops. After manual unlocking of the STB, the system may start again.

Water deficit protection: Optional; if a pressure switch is installed in the hydraulic system; If the system pressure drops below a specific value, the system stops.

Light barrier: Status of the light barrier closed (free) or interrupted

Backburn sensor: Current status of whether the backburn sensor measures an overtemperature

If this is the case, an automatic ignition is initiated with the backburn flap closed. The system runs until the temperature is undercut again.

Drop shaft: Optional; status of the drop shaft lid open or closed

Rotary grid: Status of the rotary grid open or closed

Fill level: Fill level in the drop shaft full or empty

External start: Displays whether external starting command is pending.

Vacuum: Optional; in case of vacuum monitoring, the measured value is displayed.

Furnace door: Optional; if there is a safety switch, the status is displayed.

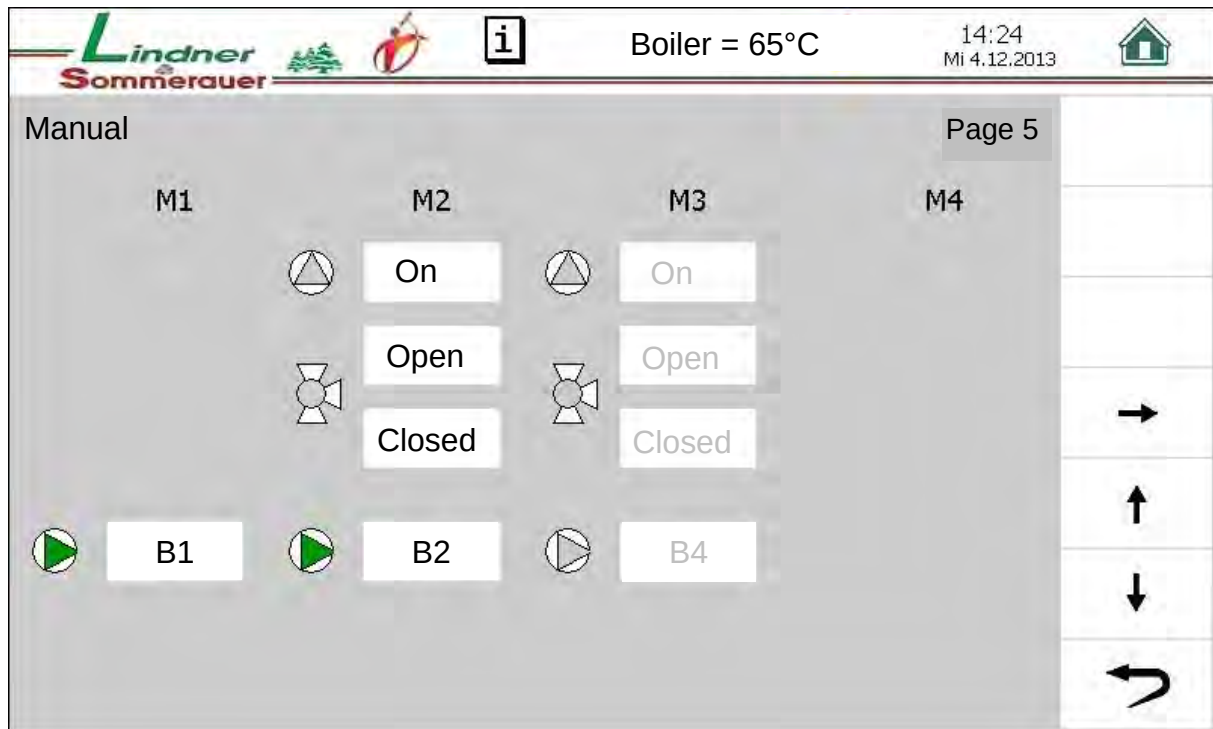


Fig. 8400

Heating circuit 1 (M1): Is defined as return increase; is not illustrated for this reason
 Heating circuit 2 -16 (M2-M16): To check if the wiring is correct, any heating circuit pump and any heating circuit mixer can be switched on and opened or closed separately. If the heating circuit pump is switched on, the triangle in the pump symbol turns green; in the resting condition, the triangle has a grey background. If the heating circuit mixer is has stopped, the circle is grey. Opening turns the circle red, closing it turns it blue.

In the above example, the heating circuits M1 to M3 and boilers B1 to B4 are activated. The M3 and B4 have no boiler or heating circuit pump and heating circuit mixer connected. This is why the texts have a grey background.

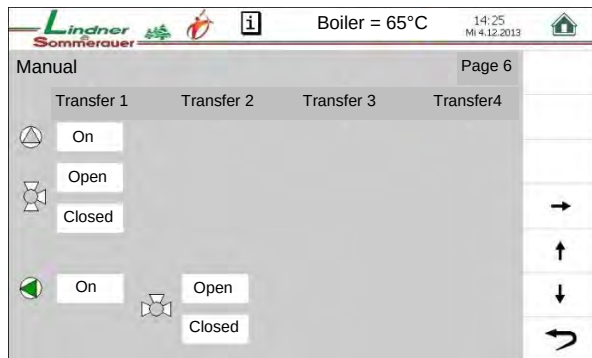


Fig. 8500



Fig. 8600

The transfer mixer, network mixer and storage functions are according to the procedure as described in figure 8400.

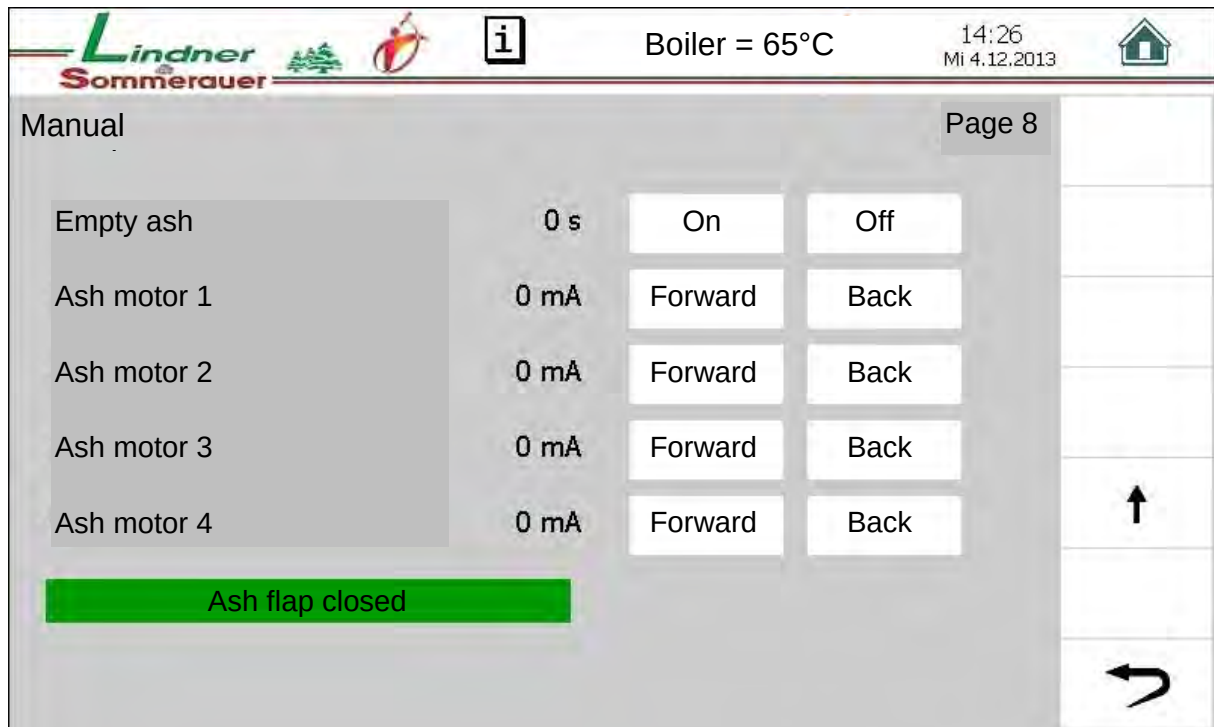


Fig. 8700

Empty ash: All ash motors start and empty the boiler.

Ash motor: The present ash motors can be run forward or backwards here. For safety-technical reasons, reverse operation is limited in time.

Ash flap: Status of the ash flap open or closed (for systems with a rated heat output >150kW)

How to correct any error messages!

Warning: risk of injury!

Switch off the main power switch, safeguard it against switching it on again and **remove the heating system from the wall socket** before any **maintenance work** and any manual manipulation at the heating system. Great care must be taken when the heating system is in manual operation. The manufacturer does not adopt any liability in this case.

F1 Power failure	Only used as a log entry. Power supply was interrupted for a longer period of time with heating systems which are "ON". The heating system restarts automatically when the flue gas temperature has dropped below the ignition temperature during switch-off phase. This action will be logged as F1 in the error memory.
F2 Burner error (not automatically acknowledged)	Press the "Quit" button on the display (the error message will disappear for about 20 sec.). Then switch to "Handbetrieb" (manual operation). Scroll to the line "Clean.: manual oper." (Cleaning: manual operation) by using the "V" button. Try to close the open burner grate by shortly pressing the "-" (minus) button. An asterisk * will appear in line 2 indicating that the burner has been closed. If this action fails proceed as follows: Press the "+" (plus) button to open the burner grate completely, switch off the heating system (cf. cleaning instructions items 1 – 4) and remove the obstructive object from the rotary grate. Finally switch on the heating system and close the grate by using "-".
F3 Faulty water sensor	Check if the electrical installation or plug connection is in mint condition. Watch the temperature in the heating room: The sensor shall not measure in the minus °C range (particularly not during initial operation).

F4 Ignition error	Check if there is sufficient heating material in the burner or check if the hot air fan is working! (Can be checked in manual operation.) The fill level sensor is probably not set correctly. That is why there is no heating material in the stoker channel. Clean the sensor und feed heating material in manual operation until it will appear in the extension pipe of the burner. When smoke emission has significantly increased you must check the flue gas tube and suction draught and clean them if need be.
F5 Excess temp heater	When this message is given check if there is sufficient power consumption or if the control and the module are bus-connected. Also check if Safety Temperature Limiter has been set correctly!
F6 Faulty flueg. sensor	Check plug connections and correct the setting of the additional parameters (sensor adjusting), otherwise contact your personal customer service representative or one of our sales partners.
F7 Water shortage protection	When your heating circuit system is equipped with pressure monitoring, this error message is given after undershooting of a defined minimal pressure. (Contact closed = system pressure alright)
F9 Stoker motor Excess current	There is probably a piece of wood which is too large or any other obstructive object in the stoker channel. First press "Quit". Then switch off the heating system, cf. cleaning instructions items 1 – 4, remove the dropshaft cover plate (cf. cleaning instructions item 7, Fig. 21) and remove the obstructive object. After that mount the cover plate again and switch on your domestic system. Finally move the stoker screw in manual operation by using the "+/-" buttons (Care must be taken in not moving back too long using "-", there is danger of damaging gears and bearings). Repeat

	this procedure if the stoker screw is still stuck.
F12 Removal Excess current	First of all acknowledge this message. Then switch the heating system to manual operation and press "+" to open the backfire flap. Try to move the removal screw forward. If this does not help shortly move the screw back. Repeat this procedure as long as the removal screw can be moved forward audibly without any big effort (Care must be taken in not moving the screw back too long using "-", there is danger of damaging gears and bearings). Finally restart the heating system. Check the cellular wheel gate – if there is any – if it is blocked by any obstructive object.
F13 Low pressure Safety shutdown	F113 is logged in case of over- or undershooting pressure setpoints in the combustion chamber. When low pressure reaches the defined tolerance values after a certain period of time, there will be a low pressure safety shutdown. Error no. F13 is then logged. Your domestic system will do a "Forced cleaning" and will start anew.
F14 Close heater door	The warning "F114 Close heater door" will appear on the display when the heater door is open. When the heater door is not closed after a certain period of time, the heating system will shut down.
F15 Burner full no autom. ignition	Acknowledge this message. Check if the overfill protection sensors (light barriers) have triggered due to heating materials, dust or fly ash. Remove any excess heating material and restart the heating system.

F16 Clean. motor error (rotary grate switch)	The rotary grate could not be opened during cleaning phase (LED is illuminated permanently). Acknowledge this message and check the correct setting and function of the rotary grate switch (distance 5 mm). If this procedure is not successful, check the cleaning mechanism. Switch off the heating system, cf. cleaning instructions items 1 – 4, dismantle the black cover plate opposite the stoker channel and check the cleaning mechanism. Fasten any loose parts – if any –, mount the cover plate again and put the heating system into operation.
F17 Clean. motor error (Excess current)	Acknowledge this message. This error message is given when there is excess current at the cleaning motor. Switch off the heating system (cf. cleaning instructions items 1 – 4) and check if there is any obstructive object in the rotary grate. If there is one, remove it and switch on the heating system. If there is none, dismantle the cover plate opposite the stoker channel and check the cleaning mechanism. Fasten any loose parts – if any –, mount the cover plate again and put the heating system into operation.
F19 Temp. dropped Restart system	Acknowledge this message. This error occurs when the heater and flue gas temperatures are below the set return flow pump – ON for more than 30 minutes. Check quality and quantity of the heating material in the combustion chamber. Restart the heating system.
F20 Check suction draught	Indicates that the speed monitoring at suction draught fan is not working or that the fan is faulty.

F21 Dropshaft open	If the dropshaft cover is opened, the warning message "Dropshaft open" appears and the entry F121 is made in the error memory, also, all removal motors are stopped (also in manual operation). If the cover remains open for two more minutes, the unit switches-off automatically, on the display the error message "Dropshaft open" appears and in the error memory F21 is recorded.
F26 Please check pellet storage	If the maximum fill time has run out and the container is still empty on the bottom, this error message appears. Please check if there is enough material in the bunker or if any lines are possibly blocked.
F27 Flap for emptying jams	If the flap for emptying does not open after the shutdown of the suction turbine, this error message appears. Please check, why the flap does not open.
F28 Flap for emptying open	If the flap does not close after ten seconds by the low pressure during suction, this error message appears. Please check, why the flap does not close.
F30 Intermediate container Sensor > 70°C	Check, if the backfire thermostat (on the intermediate container) has responded or if it is faulty. In the case of uncertainty, please contact our agent or the factory service! If the backfire thermostat is less than 70°C the unit continues working and can be started again.
F57 Phase misses Stoker motor	Indicated only when a minimum current has been measured: A motor connecting cable, for instance, has not been plugged in or a motor is defective.
F60 Phase misses Removal motor	Indicated only when a minimum current has been measured: A motor connecting cable, for instance, has not been plugged in or a motor is defective.

F75 Check light barrier or suction draught	If the light barrier is interrupted 3 times for 20 seconds, the unit assumes that the heater is overfilled and switches-off. If the light barrier remains free for 60 seconds, one value is deleted.
F95 Suction module missing	Appears, when the connection between heater and suction module has been interrupted. Please check the plug connections and the cables for any damages. If the suction module is no longer required it has to be logged-off manually in the additional parameters "suction module" by pressing the key combination "+" and "-".
F96 functional module missing	Appears, when the connection between heater and functional module has been interrupted. Please check the plug connections and the cables for any damages.
F97 Data link to superordinate control missing	Appears, when the connection between heater and superordinate control has been interrupted. Please check the plug connections and the cables for any damages.
F98 Wrong configuration Control type!	Appears when a new or additional display, for instance, is plugged in at the heater. Adjust the correct configuration in the system.
F99 No power element!	Appears when there is no connection to any of the mentioned parts. Check all plug connections and cables on damages.
F100 Sensor > 70°	Check if the backfire thermostat (mounted on the stoker channel) has triggered or is faulty. Contact your personal customer service representative or one of our sales partners when something is unclear. When the backfire thermostat has dropped below 70° again, the heating system will normally continue running automatically or, as the case may be, can be restarted.

F105 Light barrier or suct. draught check	Most frequently indicated when the heating system is in ignition program and the overfill protection sensors have shortly triggered due to excessive smoke formation. Check if there is too much heating material or any heating material which is too wet in the burner during ignition.
F109 Stoker motor Reverse move	Logs a reverse stoker motor move.
F110 Ash motor Excess current	Only occurs when an ash removal has been installed. It is only a message, the heating system will not be switched off.
F111 Dosage motor excess current	Indicates that the additional metering only works with difficulty (foreign object). Please check for the reason.
F112 Removal Reverse move	Logs a reverse move of the removal motor.
F113	See F13.
F114	See F13.
F115 Ash motor SL superord.control	When a superordinate control also controls the ash removal for the ash motors altogether, this error indicates that the ash motors of the superordinate control have a general problem. Currently no differentiation
F116 Reservoir sensor faulty	Check the temperature sensors at the reservoir and replace, if necessary.
F121	See F21.
F180 No connection to heater 1	Appears, when the connection between heater and superordinate control has been interrupted. Please check the plug connections and the cables for any damages.

F181	See F180
No connection to heater 2	
F182	See F180
No connection to heater 3	
F183	See F180
No connection to heater 4	
F184	See F180
No connection to heater 5	
F185	See F180
No connection to heater 6	
F190	Error message F190 is given when a defined boiler
Alarm	temperature has been over- or undershot over a defined
Boiler monitoring	period of time (manufacturing setting 45 min). The alarm boiler monitoring sends a call and/or a message to the alarm output. If there are several boilers, the same time window applies to all of them. This error message is also given when a temperature sensor is defective. Manufacturing setting < 0°C
F200	Empty the ash box and delete the message with the "+" and
Empty ash box	"-" buttons.
Delete +/-	
F201	The unit changes the suction position.
Suction position	
Switching phase	
F210	Logs a shutdown by the room unit.
Shutdown by	
Room unit	



211	Logs a shutdown by circulation pump lock times or when
Shutdown by	unit is "Off" by outside temperature.
Cir.pmp lock times or	
Unit OFF by outs.tmp	

220	This message appears on the display when the control's
Error clock	clock module is defective.

230	The unit has been switched-off manually at the reservoir
External Stop by reservoir	module.
module	

Remedy of Performance Losses

Performance losses can be due to various different reasons.

Cause:	Remedy:
Heater nominal temperature has been set too low.	Increase the "Heater NOM." temperature to a minimum of 80 °C in permanent operation.
Combustion chamber temp. has been set too low.	Set "Comb.cham.tmpPL" (combustion chamber temperature partial load) in permanent operation between approx. 375 °C and 700 °C at nominal load.
Stoker screw feeds too little heating material into the combustion chamber.	Slightly increase the feed nominal time in permanent operation or reduce "Idle time MIN". When chipped wood of minor quality is used increase "F1 MAX" (speed of suction draught fan) in steps of five % in permanent operation.
Heater and flue gas paths are not cleaned.	When the "Fluegas temp." is permanently above the "Fluegas NOM" temperature and the heater does not achieve the desired nominal temperature at all it can be assumed that the heater cleaning has not been sufficient. (For further details go to chapter 2, cleaning instructions.)
Check of installation (hydraulics).	When heating is insufficient first check if the power generator (heater) or the power transportation and distribution facilities (pumps – mixers) are to blame. If something is unclear please contact your installation engineer.
Chipped wood of minor quality.	Strictly adhere to any prescribed standard heating materials if you want to achieve reasonable results in terms of power energy. (Cf. pages 2, 5 and 6)

You will be satisfied with a heating system from Lindner & Sommerauer when you adhere to these general conditions!

Excerpt from TRVB H 118 Edition 2003 Annex 2/1

All reviews, cleanings, operations and events must be entered in this log book according to the following template.

Logbook

Automatic Wood-fuelled systems

System operator:

.....

.....

System constructor:

.....

.....

Furnace:

Make:

Type:

Year of build:

Heating output:

Miscellaneous:

Excerpt from TRVB H 118 Edition 2003 Annex 2/2

Regular inspection of the automatic wood furnace:

(during the heating period/operating time)

1) Weekly visual inspection:

The entire furnace, including fuel storage, must be visually inspected once per week. Any defects found must be removed without delay.

2) Monthly inspections:

The following inspections must be performed every month:

- Function of the backburning protection device RSE, specifically reliable closing
- Readiness for operation of the extinguishing facilities, including water supply
- Cleanliness of the flue gas paths (flue gas drafts in the boiler, connection piece and smoke collection)
- Proper operation of the control
- Function of the interference reporting/warning device(s)
- Proper operation of the combustion air and suction draft fans
- Proper condition of the combustion chamber/lining
- Readiness for use of the portable fire extinguisher(s)
- Proper ash storage
- Heating room free of flammable storage
- Roof room free of flammable deposits
- Fire protection closures (fire protection doors - self-closing)

3) Maintenance:

Depending on heating output, the furnace must be regularly subjected to maintenance by the system installer.

Heating output	Maintenance intervals
≤ 150kW	every 3 years
≤ 400kW	every 2 years
> 400kW	every 1 year

Maintenance in the sense of TRVB H 118 edition 2003 Annex 2/2, referring to maintenance of safety-relevant components (e.g.: cell-wheel airlock, backburn flap,.....) by a qualified person.

Excerpt from TRVB H 118 Edition 2003 Annex 2/3

Inspections of the automatic wood furnace by the operator:

Year:.....2014.....

System operator: Max Mustermann

Responsible operator: Max Mustermann

monthl. inspection	Month Day	Jan 4.	Feb 6.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Note
Backburn protection device		X	X											1) Boiler cleaned
Extinguishing device(s)		X	X											2) Review on 01 Feb. 2012
Flue gas paths		1)	X											
Control		X	X											
Warning device(s)		X	X											
Fans		X	X											
Combustion chamber/ lining		X	X											
Portable fire extinguishers		X	2)											
Ash storage		X	X											
Storage in the heating room		X	X											
Deposits on the roof		X	X											
Fire protection closures		X	X											
Smoke collection Review/Clean.		X	X											
Signature/ Abbreviation														

Maintenance by specialist: _____ _____ performed on: _____ Signature	Comment:
--	---

Excerpt from TRVB H 118 Edition 2003 Annex 2/3

Inspections of the automatic wood furnace by the operator:

Year:.....

System operator:

Responsible operator:

Monthl. inspection	Month Day	Jan 4.	Feb 6.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Note
Backburn protection device		X	X											1) Boiler cleaned
Extinguishing device(s)		X	X											2) Review on 01 Feb. 2012
Flue gas paths		1)	X											
Control		X	X											
Warning device(s)		X	X											
Fans		X	X											
Combustion chamber/ lining		X	X											
Portable fire extinguishers		X	2)											
Ash storage		X	X											
Storage in the heating room		X	X											
Deposits on the roof		X	X											
Fire protection closures		X	X											
Smoke collection Review/Clean.		X	X											
Signature/ Abbreviation														

Maintenance by specialist: _____ _____ _____ Performed on: _____ Signature	Comment:
---	---

Excerpt from TRVB H 118 Edition 2003 Annex 2/3

Inspections of the automatic wood furnace by the operator:

Year:.....

System operator:

Responsible operator:

Monthl. inspection	Month Day	Jan 4.	Feb 6.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Note
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Extinguishing device(s)		X	X											2) Review on 01 Feb. 2012
Flue gas paths		1)	X											
Control		X	X											
Warning device(s)		X	X											
Fans		X	X											
Combustion chamber/ lining		X	X											
Portable fire extinguishers		X	2)											
Ash storage		X	X											
Storage in the heating room		X	X											
Deposits on the roof		X	X											
Fire protection closures		X	X											
Smoke collection Review/Clean.		X	X											
Signature/ Abbreviation														

Maintenance by specialist: _____ _____ Performed on: _____ _____ Signature	Comment:
--	---



Declaration of Conformity

Lindner & Sommerauer, SL-Technik GmbH, hereby declares that the chopped goods and pellet system described below matches the provisions of the machinery safety regulations 2010 – MSV 2010, BGBl. no. II 282/2008 as amended.

The following types correspond to these directives:

SL-P 8, SL-P 12, SL-P 15, SL-P 25, SL-P 30, SL-P 40, SL-P 45, SL-P 49, SL-P 50, SL-P 65,
SL-P 80, SL-P 99, SL-P 110, SL-P 150, SL-P 199, SL-P 250;
SL 25 T, SL 30 T, SL 40 T, SL 49 T, SL 50 T, SL 65 T, SL 80 T, SL 99 T, SL 110 T,
SL 150 T, SL 199 T, SL 200 T, SL 250 T;
SL 25 T/2R, SL 30 T/2R, SL 40 T/2R, SL 49 T/2R, SL 50 T/2R;

The following EU directives were applied in the design and construction of the machine:

2004/108/ EC directive on electromagnetic compatibility

EN 55011

EN 55022

EN 50140/02.95

EN 61000

2006/42/EC Machinery directive

2006/95/EC Low-voltage directive

97/23/EC Pressure device directive

The following standards were applied in the design and construction of the machine:

EN 303/5

DIN 4702-2

ÖNORM M 7550

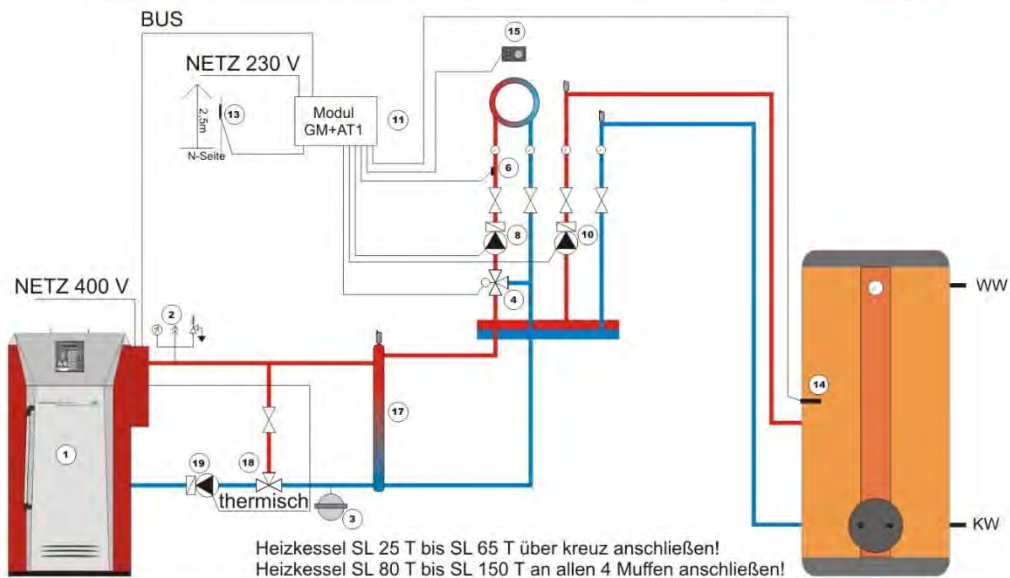
St. Pantaleon, 02 January 2014



Christian Sommerauer
Technical management



Heizungsschemen für Hackgutanlagen SL 30T - SL 150T Grundmodul + 1 Heizkreis (Bis 16 HK möglich)



- 1 Kessel
- 2 Sicherheitseinheit
- 3 Ausdehnungsgefäß
- 4 Mischer HK 1
- 5 Mischer HK 2
- 6 Vorlauffühler HK 1
- 7 Vorlauffühler HK 2

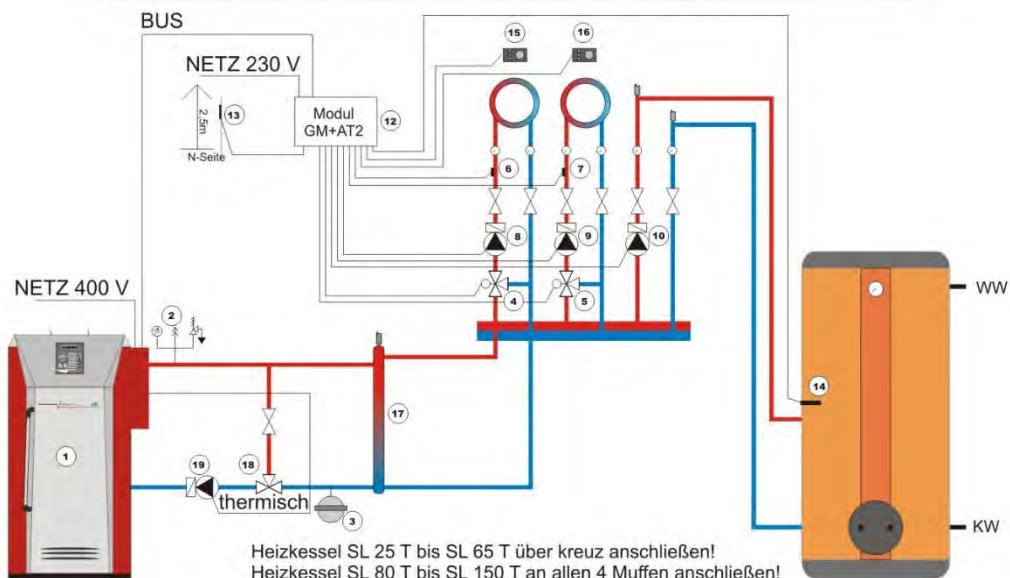
- 8 Pumpe HK 1
- 9 Pumpe HK 2
- 10 Boilerladepumpe
- 11 GM+AT1
- 12 GM+AT2
- 13 Außentemperaturfühler
- 14 Boilerfühler

- 15 Raumfühler HK 1
- 16 Raumfühler HK 2
- 17 Hydraulische Weiche
- 18 Rücklaufanhebeventil
- 19 Pumpe RLAH

Niedertemperaturheizkreise (z.B.: Fußbodenheizungen...) müssen mit Begrenzungsthermostaten im Vorlauf vor Überhitzung geschützt werden.

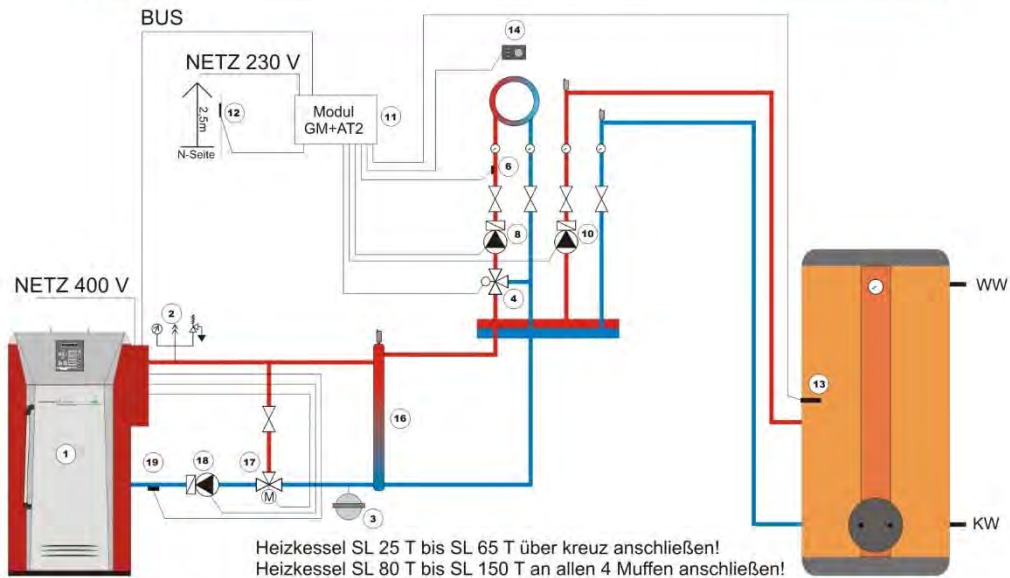
Rücklaufanhebung bis 50 kW mit Thermoventil (dargestellt) über 50 kW mischergeregelte RLAH einbauen. Der Mischer ist im Schaltschrank oder direkt im Modul als HK1 anzuschließen.

Heizungsschemen für Hackgutanlagen SL 30T - SL 150T Grundmodul + 2 Heizkreise (Bis 16 HK möglich)





Heizungsschemen für Hackgutanlagen SL 30T - SL 150T Grundmodul + 1 Heizkreis (Bis 16 HK möglich)



- 1 Kessel
- 2 Sicherheitseinheit
- 3 Ausdehnungsgefäß
- 4 Mischer HK 1
- 5 Mischer HK 2
- 6 Vorlauffühler HK 1
- 7 Vorlauffühler HK 2

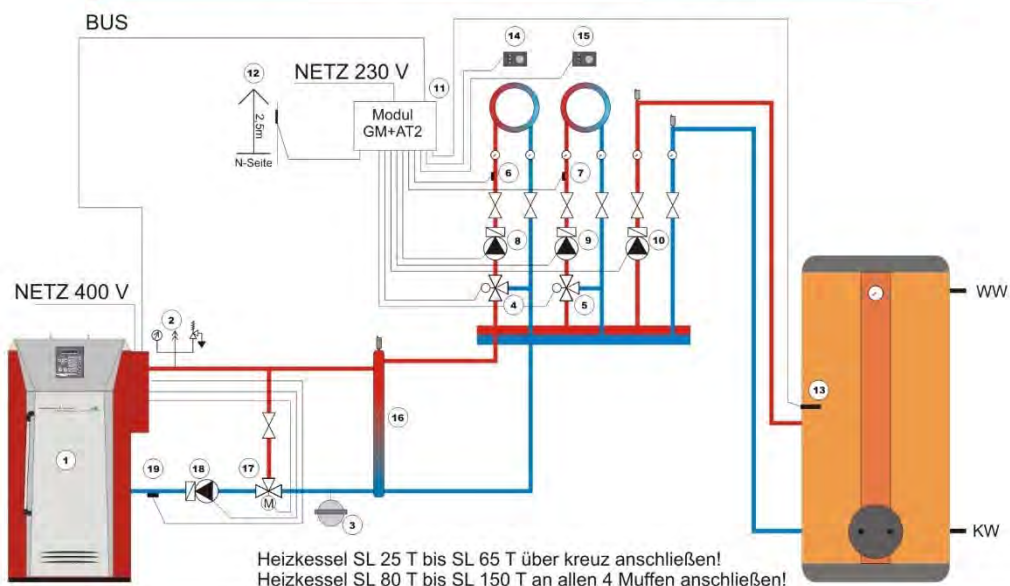
- 8 Pumpe HK 1
- 9 Pumpe HK 2
- 10 Boilerladepumpe
- 11 GM+AT2
- 12 Außentemperaturfühler
- 13 Boilerfühler
- 14 Raumfühler HK 1

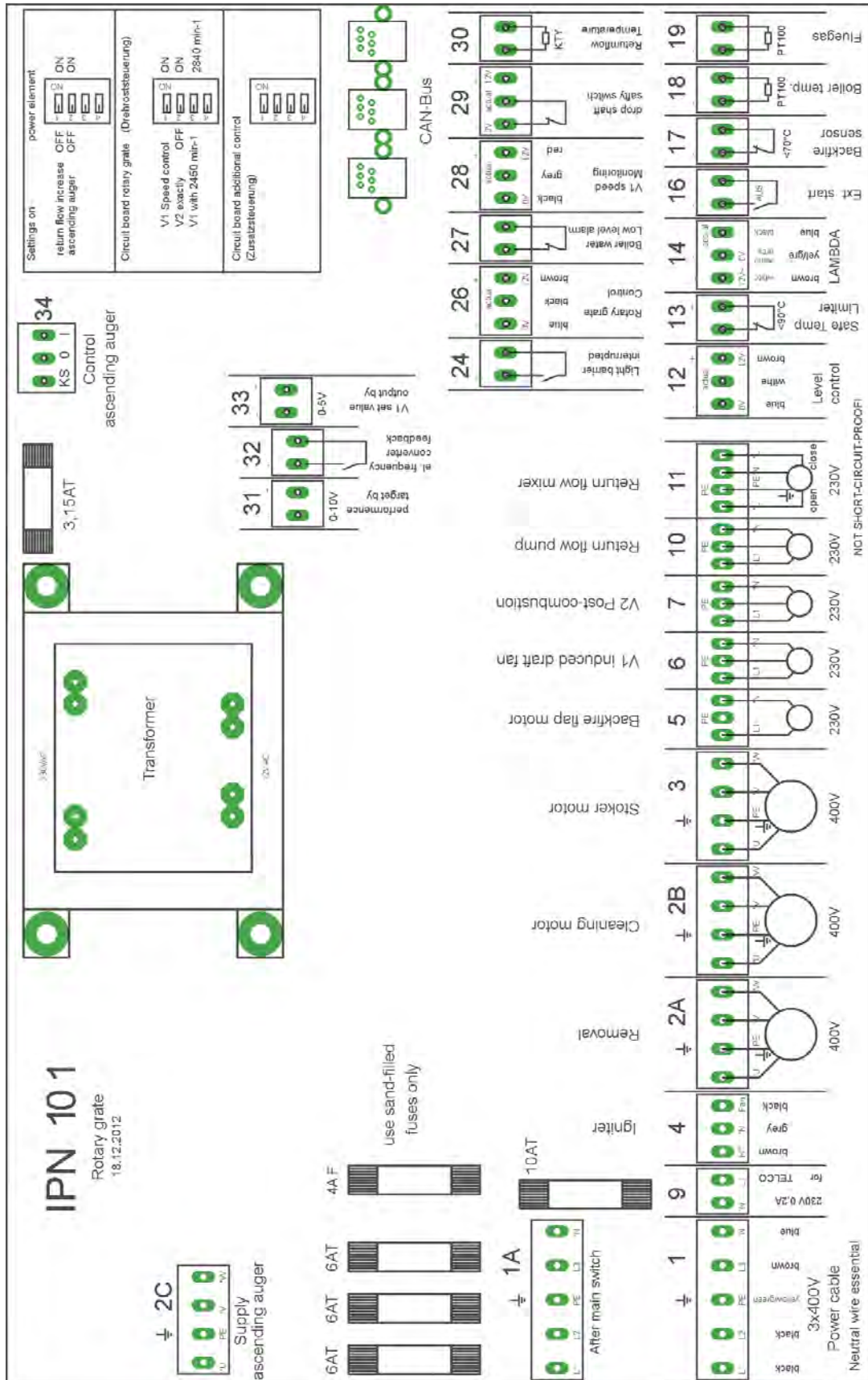
- 15 Raumfühler HK 2
- 16 Hydraulische Weiche
- 17 Mischer RLAH
- 18 Pumpe RLAH
- 19 Rücklauffühler

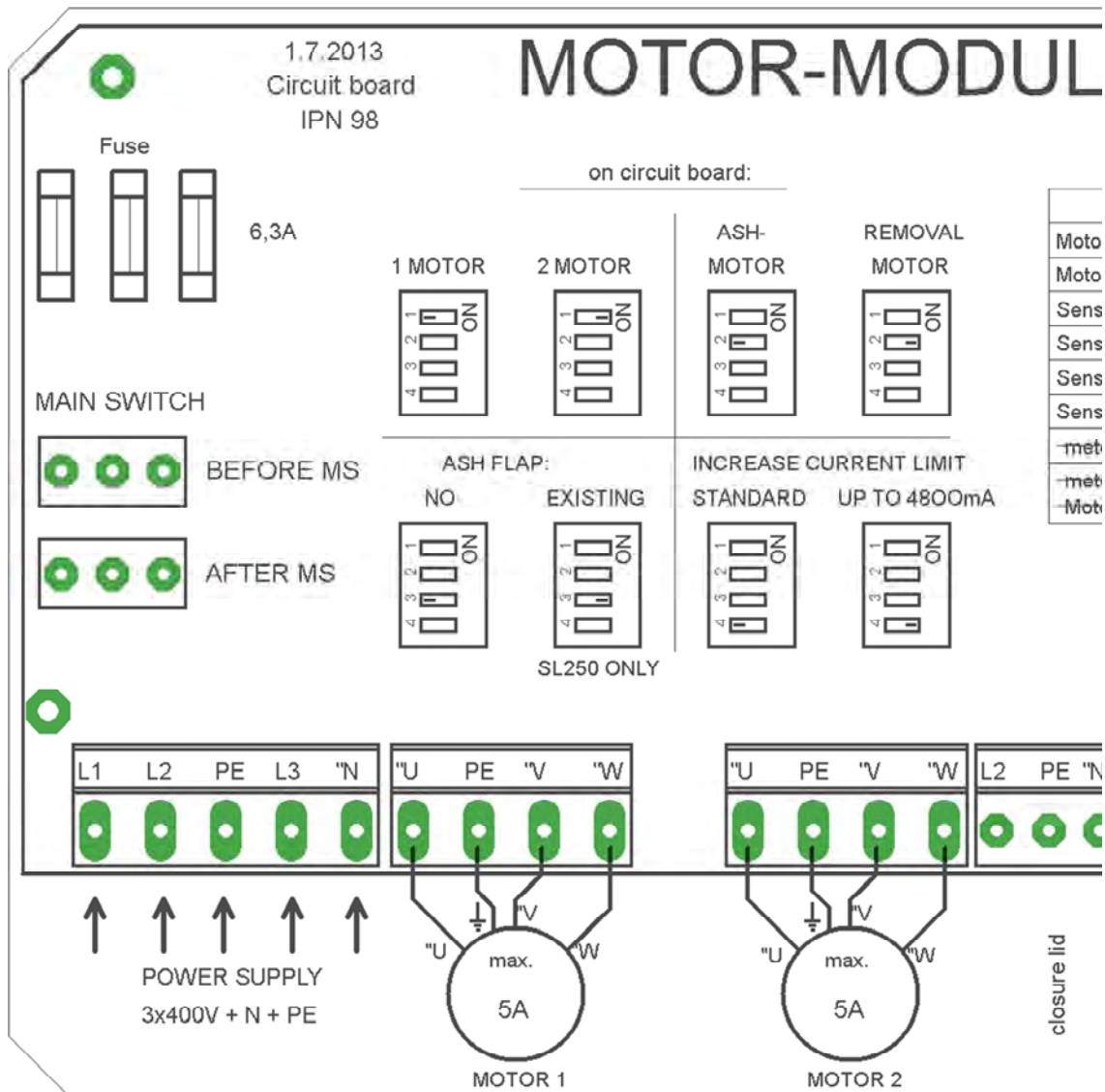
Niedertemperaturheizkreise (z.B.: Fußbodenheizungen...) müssen mit Begrenzungsthermostaten im Vorlauf vor Überhitzung geschützt werden.

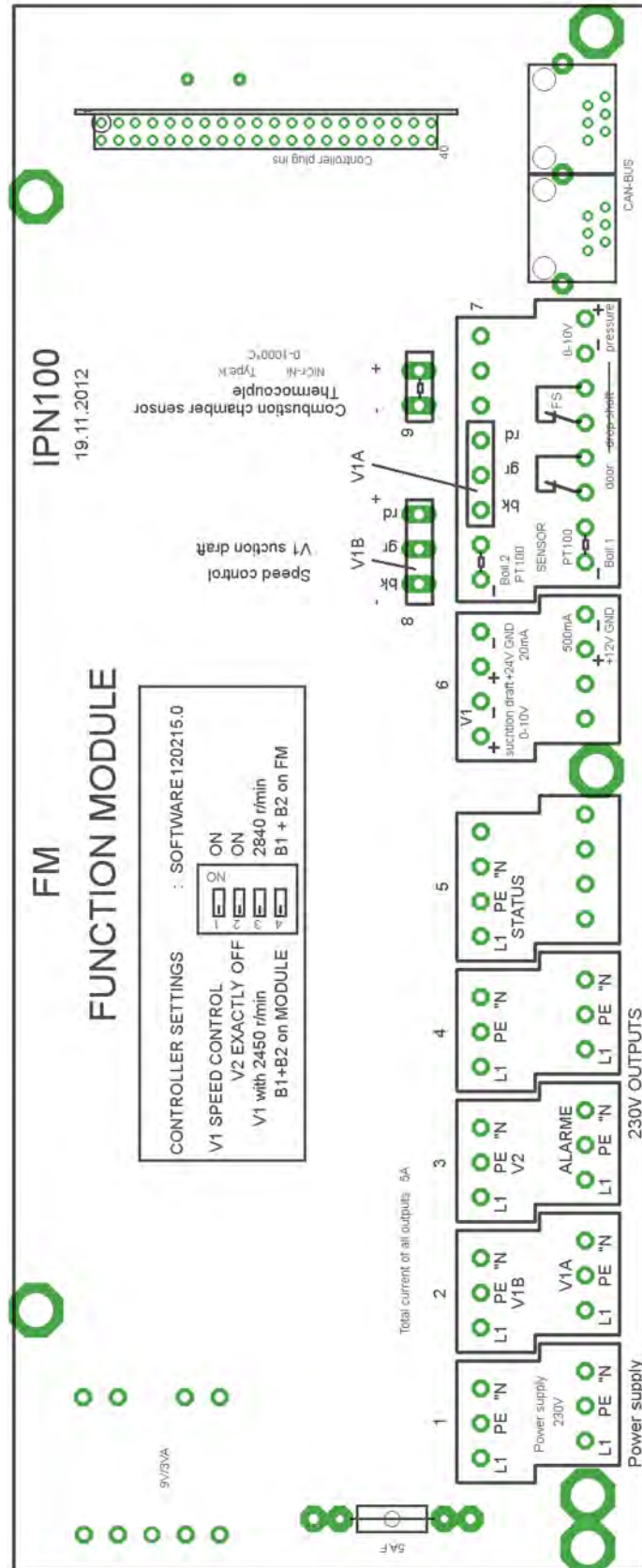
Rücklaufanhebung bis 50 kW mit Thermoventil (dargestellt) über 50 kW mischergeregelte RLAH einbauen. Der Mischer ist im Schaltschrank oder direkt im Modul als HK1 anzuschließen.

Heizungsschemen für Hackgutanlagen SL 30T - SL 150T Grundmodul + 2 Heizkreise (Bis 16 HK möglich)









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